Transportation in Transition

A Look at Changing Travel Patterns in America's Biggest Cities

Georgia PIRG
Education Fund

FRONTIER GROUP

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Acknowledgments

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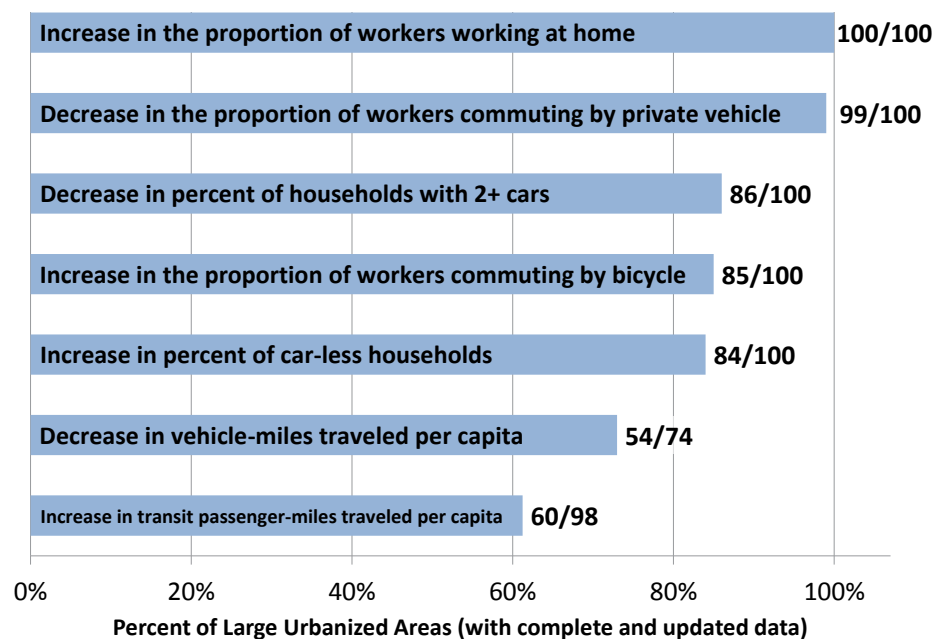
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Executive Summary

Americans' transportation habits have changed. The average American drives 7.6 percent fewer miles today than when per-capita driving peaked in 2004.

A review of data from the Federal Highway Administration, Federal Transit Administration and Census Bureau for America's 100 most populous urbanized areas – which are home to over half of the nation's population – shows that the decline in per-capita driving has taken place in a wide variety of regions. **From 2006 to 2011, the average number of miles driven per resident fell in almost three-quarters of America's largest urbanized areas** for which up-to-date and accurate data are available. Most urbanized areas have also seen increases in public transit use and bicycle commuting and decreases in the share of households owning a car. (See Figure ES-1.)

Figure ES-1: Driving Is Declining and Non-Driving Transportation Is Increasing in Urbanized Areas

Increase in the proportion of workers working at home	100/100
Decrease in the proportion of workers commuting by private vehicle	99/100
Decrease in percent of households with 2+ cars	86/100
Increase in the proportion of workers commuting by bicycle	85/100
Increase in percent of car-less households	84/100
Decrease in vehicle-miles traveled per capita	54/74
Increase in transit passenger-miles traveled per capita	60/98

Percent of Large Urbanized Areas (with complete and updated data)

The first five data bars ("Increase in the proportion of workers working at home" to "Increase in the percent of car-less households") measure the 100 most populous urbanized areas from 2000 to 2010. The "Decrease in vehicle-miles traveled per capita" measures the 74 (out of the 100) most populous urbanized areas for which comparable data exist from 2006 to 2011. The "Increase in transit passenger-miles traveled per capita" measures the 98 (out of 100) most populous urbanized areas for which comparable data exist from 2005 to 2010.

Regional, state and federal officials need to account for changing trends in driving as they consider how to adapt their transportation policies and infrastructure plans to a new future of slower growth in vehicle travel.

Figure ES-2: The Proportion of Workers Traveling to Work by Car Has Fallen across the Country (2000 to 2007-2011)
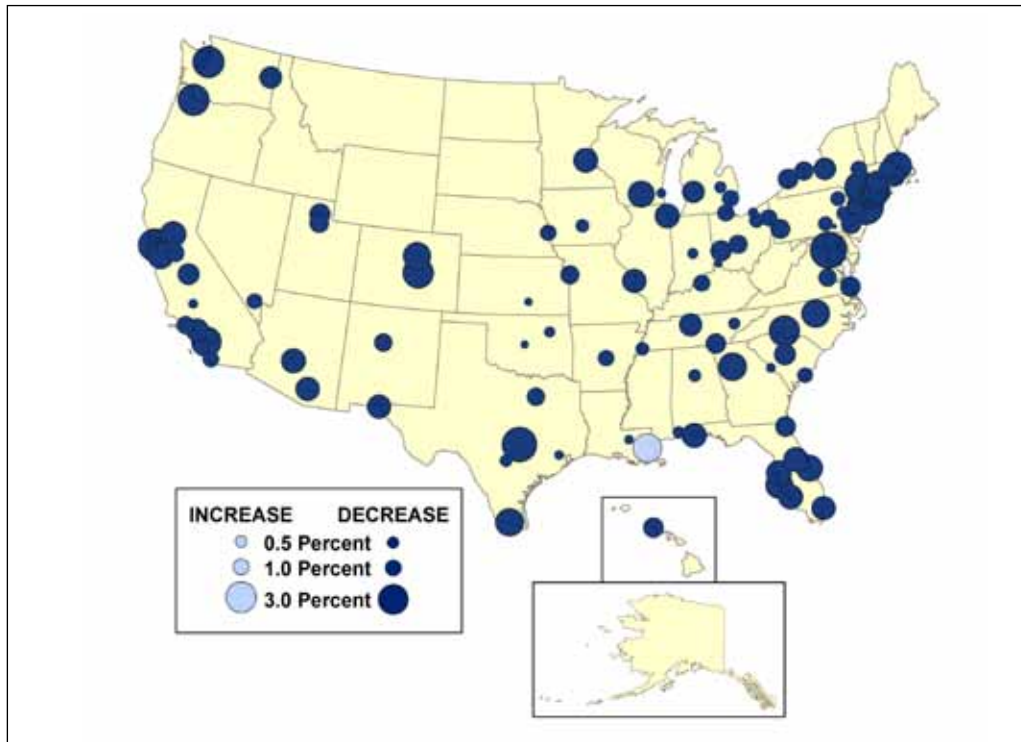
TABLE ES-1: 10 Urbanized Areas with the Largest Decline in Proportion of Workers Commuting by Private Car or Van

Rank	Urbanized Area	Change in the proportion of workers commuting to work by private car or van (2000 to 2007-2011)
1	New York-Newark, NY-NJ-CT	-4.8%
2	Washington, DC-VA-MD	-4.7%
3	Austin, TX	-4.5%
4	Poughkeepsie-Newburgh, NY	-4.0%
5	San Francisco-Oakland, CA	-3.9%
6	Portland, OR-WA	-3.6%
7	Seattle, WA	-3.6%
8	Colorado Springs, CO	-3.4%
9	Charlotte, NC-SC	-3.4%
10	Mission Viejo, CA	-3.1%

What Are "Urbanized Areas" and Why Are They Important?

An "urbanized area" is a geographic area that is generally larger than a city and smaller than a metropolitan area. The Census Bureau defines urbanized areas as densely developed areas with 50,000 or more residents that include both a central city and adjacent built-up areas (including suburbs). The Census Bureau redefines the boundaries for each urbanized area every 10 years.
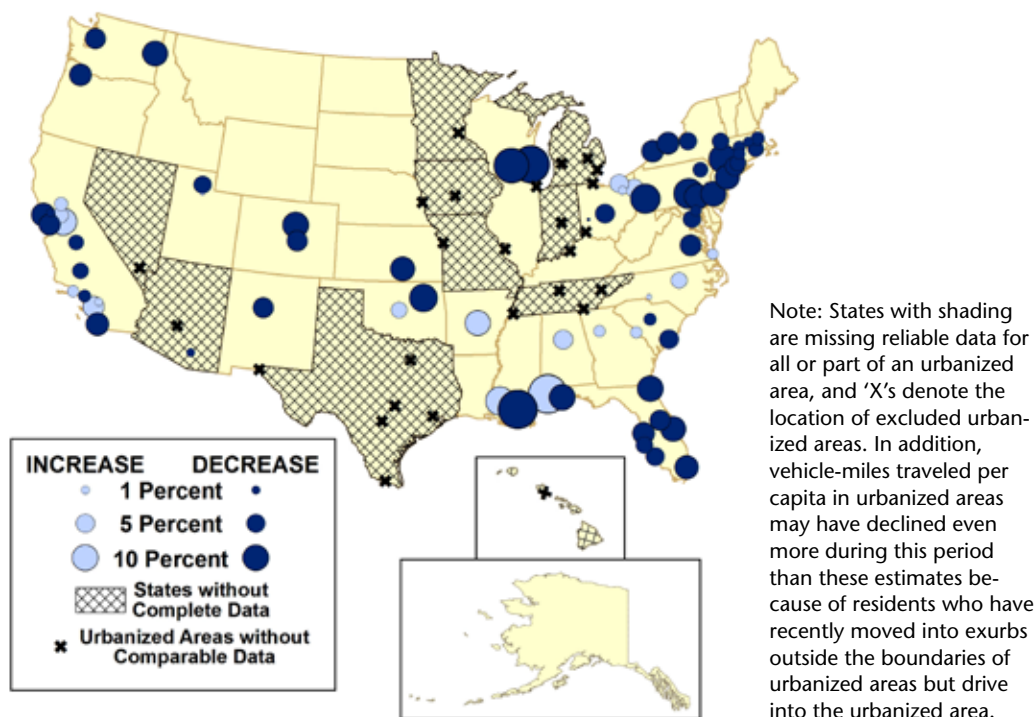
Urbanized areas are important geographic units for transportation funding and planning. The 100 largest urbanized areas house more than half of the U.S. population and they are growing rapidly – between 2000 and 2010, the population in all urbanized areas grew 14.3 percent, compared to the total population, which grew 9.7 percent.

Trends in travel in urbanized areas are important both because they are a major indicator of overall vehicle travel and because they have important implications for transportation policy and investment decisions.

Transportation trends are changing in America's biggest urbanized areas.

- The proportion of workers commuting by private vehicle – either alone or in a carpool – declined in **99 out of 100** of America's largest urbanized areas between 2000 and 2007-2011.[1] (See Figure ES-2.)

- The proportion of residents working from home has increased in **100 out of the 100** largest urbanized areas since 2000.

- The proportion of households without cars increased in **84 out of the 100** largest urbanized areas from 2006 to 2011.

- The proportion of households with two cars or more decreased in **86 out of the 100** largest urbanized areas from 2006 to 2011.

Figure ES-3: VMT per Capita Has Declined across the Country (2006 to 2011)

Note: States with shading are missing reliable data for all or part of an urbanized area, and 'X's denote the location of excluded urbanized areas. In addition, vehicle-miles traveled per capita in urbanized areas may have declined even more during this period than these estimates because of residents who have recently moved into exurbs outside the boundaries of urbanized areas but drive into the urbanized area.

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1. For a list of data sources, see the Methodology. Throughout this report, "2007-2011" refers to data collected by the 2011 American Community Survey 5-year survey which covers years 2007, 2008, 2009, 2010 and 2011. The American Community Survey reports one number for all five years.

Table ES-2: 10 Urbanized Areas with Largest Declines in VMT per Capita

Rank	Urbanized Area	Percent decrease in VMT/capita from 2006 to 2011	Decrease in VMT/capita from 2006 to 2011
1	New Orleans, LA	22.4%	1,852
2	Milwaukee, WI	20.9%	1,996
3	Madison, WI	17.7%	1,570
4	Harrisburg, PA	14.1%	1,581
5	Pittsburgh, PA	13.0%	1,068
6	Poughkeepsie-Newburgh, NY	12.4%	1,778
7	Tulsa, OK	11.5%	1,683
8	Jacksonville, FL	10.6%	1,431
9	Denver-Aurora, CO	10.6%	990
10	Pensacola, FL-AL	10.3%	1,475

There is additional evidence of declining driving in those urbanized areas with standardized data on vehicle-miles traveled.

- The average number of vehicle-miles traveled (VMT) per capita declined in **54 out of the 74** large urbanized areas whose trends could be analyzed between 2006 and 2011.[2] (See Figure ES-3.)

- New Orleans has seen the largest drop in per-capita VMT – 22 percent – since 2006, possibly a result of Hurricane Katrina. The urbanized areas containing two Wisconsin cities, Milwaukee and Madison, saw the second and third biggest drops in per-capita VMT – 21 percent and 18 percent, respectively. Two Pennsylvania urbanized areas, Harrisburg and Pittsburgh, saw the fourth and fifth biggest drops in per-capita VMT – 14 percent and 13 percent, respectively.

The use of non-driving modes of transportation has increased in a majority of the nation's most populous urbanized areas.

- The proportion of residents bicycling to work increased in **85 out of 100** of America's largest urbanized areas between 2000 and 2007-2011.

- The number of passenger-miles traveled (PMT) per capita on transit increased in **60 out of 98** of America's large urbanized areas whose trends could be analyzed between 2005 and 2010.[3]

Variations in the economy do not appear to be responsible for variations in the trends in driving among urbanized areas. In fact, the economies of urbanized areas with large declines in driving have been *less affected* by the recession according to unemployment and poverty indicators.

2. While this report focuses on the transportation trends in America's 100 most populous urbanized areas, 26 urbanized areas are excluded from the VMT analysis. VMT per capita and changes in VMT over time in these 26 urbanized areas could not be accurately determined due to states' failure to use standardized and up-to-date data collection methods.

3. While this report focuses on the transportation trends in America's 100 most populous urbanized areas, two urbanized areas were excluded from the public transit analysis. The passenger-miles traveled on public transit in Mission Viejo (CA) and Ogden-Layton (UT) were excluded because no transit agency lists these two urbanized areas as their primary urbanized area, and the passenger miles and trips traveled within urbanized areas in 2005 were derived from transit agency travel information.

- Between 2006 and 2011, the average increase in the unemployment rate in the 15 urbanized areas with the highest per-capita declines in VMT was 3.9 percent, while the average increase in all other urbanized areas was 4.6 percent.

- Between 2006 and 2011, the average increase in the poverty rate of the 15 urbanized areas with the highest per-capita declines in VMT was 2.7 percent, while the average increase in all other urbanized areas was 3.6 percent.

The time has come for cities and states to shift their transportation priorities away from investments in expensive, unnecessary new highways, and toward the maintenance and repair of our existing infrastructure and the development of new transportation choices for Americans. To that end, public officials should:

- Revisit transportation plans. Many existing transportation plans continue to reflect outdated assumptions that the number of miles driven will continue to rise steadily over time. Officials at all levels should revisit transportation plans to ensure that they reflect recent declines in driving and new understandings of the future demand for travel.

- Reallocate resources. With driving stagnating in many areas and demand for transit, bicycling and pedestrian infrastructure increasing, officials should reallocate resources away from wasteful highway expansion projects and toward system repair and

programs that expand the range of transportation options available to Americans.

- Remove barriers to non-driving transportation options. In many areas, planning and zoning laws and transportation funding rules limit public officials' ability to expand access to transportation choices. Officials at all levels should remove these barriers and ensure access to funding for non-driving forms of transportation.

- Use innovative travel tools and services. New technologies and techniques provide transportation officials with new tools to address transportation challenges. Transportation agencies should encourage the use of carsharing, bikesharing and ridesharing and provide real-time travel information for public transit via smartphone.

- Get better data. Transportation agencies should compile and make available to the public more comprehensive, comparable and timely data to allow for better informed analysis of the causes and magnitude of changes in driving trends. Officials at all levels should eliminate inconsistencies in the reporting of transportation data, increase the frequency of surveys that shed light on changes in transportation preferences and behaviors, and use emerging new sources of information made possible by new technologies in order to gain a better grasp of how driving trends are changing and why.

Introduction

Beginning in the mid-1950s, America's leaders embarked on building the national interstate highway system. When Madison, Wisconsin, was given the opportunity to bring the interstate into the city in the 1960s, local officials decided to keep its downtown highway-free – they believed that a highway running through Madison's narrow downtown isthmus would make the city less attractive. But without the Interstate, city officials needed to make sure that residents had access to other modes of transportation to travel downtown. So city planners sought to build a multimodal transportation network that promoted bicycling, public transit and walking.[1]

Support for biking from advocacy groups and students combined with the gasoline price shocks in 1973 further paved the way for more biking in the city. In 1973, the Wisconsin state legislature passed the three-foot passing law, which called for cars to give bicycles three feet of space while passing them on the road, and in 1975, Madison adopted its first bicycle transportation plan.[2]

As a result, Madison today has an extensive network of bike lanes and a comprehensive bus system complete with turn lanes exclusively for bikes and buses, diagonal bike crossings, bike lanes that change locations during rush hour, bike boxes (that allow cyclists to ride to the front of cars waiting at a red light), and streets that are two-way for cyclists but one-way for cars.[3] When a street must be built or rebuilt, it's standard practice for city planners to ask how the street can be designed to facilitate biking and other non-driving forms of transportation.[4]

Improvements to bicycle infrastructure and public transit continue today. In recent years, city developers reconstructed Odana Road – a large residential artery southwest of downtown – and replaced the often-empty parking spaces with bike lanes, pedestrian islands, and a middle turn lane for vehicles. City developers also reconstructed Sherman Avenue – a large business and residential street northeast of downtown – and replaced the street's four automobile lanes with three (one lane in each direction plus a middle turn lane) and added two bike lanes.[5] The city bus system recently added a line in the Southeast Side after students and teachers there asked the city for transit in their neighborhoods.[6]

Madison's investments in transportation options have helped spur a shift away from driving and toward other modes of travel. According to the Federal Highway Administration, the annual miles driven per person across Madison's entire urbanized area decreased from 8,900 to 7,300 between 2006 and 2011. Census data show that bike ridership to work in the city has increased 88 percent in the past 11 years.[7] From 2004 to 2011, ridership on city buses rose from 11.0 million boardings to 14.6 million boardings.[8]

Across the country, cities are looking for ways to support their residents in their desire to drive less, much as Madison has done over the last decade. In some cities, those efforts have faced challenges such as transit funding crunches and resulting fare hikes and service cutbacks. But in other places, new technologies, new infrastructure for biking and walking, and improved transit service are providing more Americans with the freedom to drive less – delivering big benefits in reduced congestion, cleaner air and improved quality of life.

This report looks at travel trends in America's largest urbanized areas, the Census-defined high-density areas that are the nation's largest population centers and hold out-sized importance for the nation's transportation and planning decisions. Growth in urbanized areas is greatly outpacing that of the nation as a whole – increasing 14.3 percent between 2000 and 2010, compared to 9.7 percent for the whole population. Infrastructure plays a crucial role in enabling urbanized areas to act as "hubs" for the region and economy. Streets and highways in urbanized areas also see the greatest amount of use – in 2011, roads in urban areas (which are made up of urbanized areas and smaller "urban clusters") saw two-thirds of all traffic.[9] The 100 most populous urbanized areas that are the subject of this report housed 53 percent of the entire U.S. population.[10]

In documenting how Americans are driving less and shifting toward other modes of transportation in these crucial population centers, this report shows that the time has come for state and federal officials to invest in 21st century solutions to our transportation challenges and provide new transportation options for all Americans.

Driving Has Declined in Most of America's Large Urbanized Areas

Americans' driving habits have changed. After decades of increased automobile travel, since 2006 the average number of miles driven per resident has fallen in almost three-quarters of America's largest urbanized areas for which up-to-date and comparable data are available.

What Are "Urbanized Areas"?

An "urbanized area" is a geographic area that is generally larger than a city and smaller than a metropolitan statistical area (which includes the rural area in the same county as the city). The Census Bureau defines urbanized areas as densely developed places with 50,000 or more residents that can include cities and adjacent built-up suburbs. Urbanized areas are defined by their relatively dense city living patterns, not their legal jurisdictional boundaries. To keep current with changing residential trends, the Census Bureau redefines the boundaries for each urbanized area every 10 years. (See Figure 1.)

Figure 1: An "Urbanized Area" Is Larger than a Municipality and Smaller than a Metropolitan Statistical Area[11]
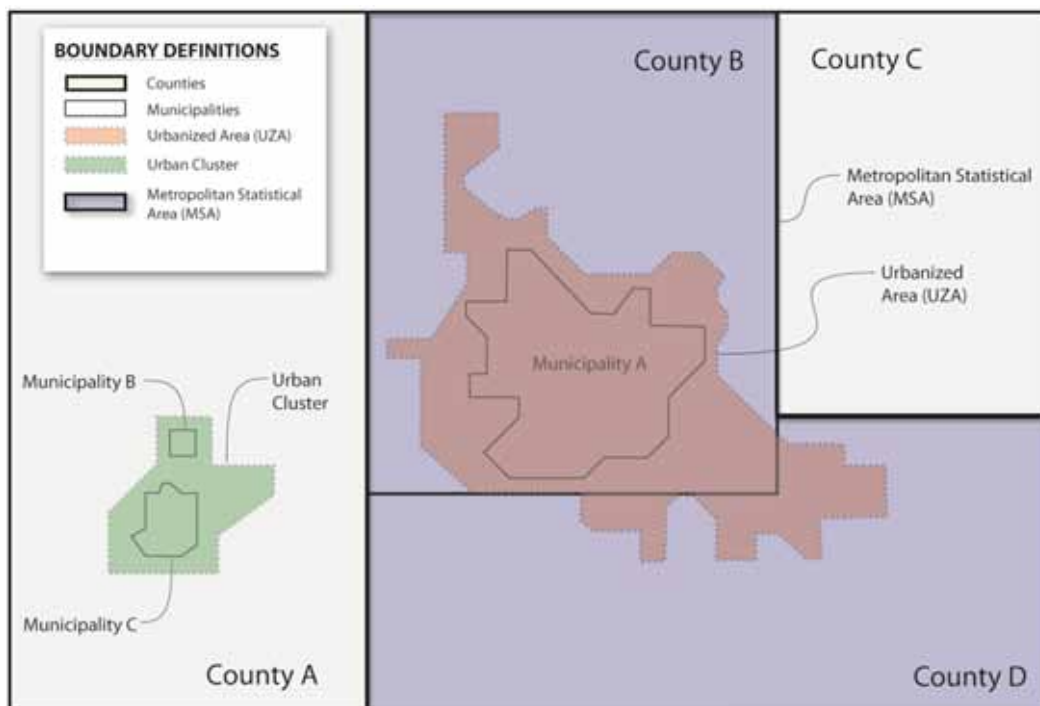
Figure 2: Total and per Capita Vehicle-Miles Traveled, U.S.

*2012 data from U.S. Department of Transportation's (U.S. DOT) *Traffic Volume Trends* series of reports; data from previous years from U.S. DOT's *Highways Statistics* series of reports.
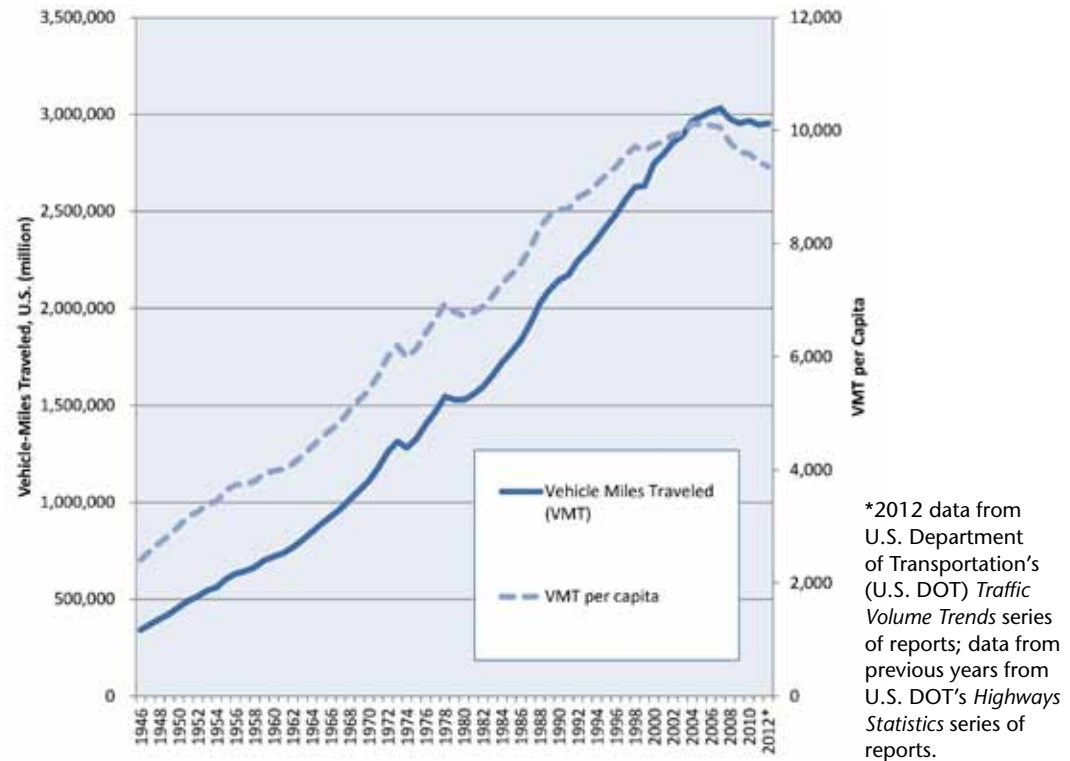
Decline in Vehicle-Miles Traveled

During the second half of the 20th century, the total number of miles driven in America steadily increased. Between 1970 and 2004, the number of vehicle-miles traveled per capita increased by an average of 1.8 percent annually. Even more dramatically, and the total number of vehicle-miles traveled increased by an average of 2.9 percent annually.[12] (See Figure 2.)

Then, the trend changed. Since the mid-2000s, the number of miles driven in America – both total and per capita – has fallen. From 2004 to 2012, the average number of vehicle-miles driven per capita decreased by 7.6 percent.[13] And from 2007 – when Americans' total vehicle travel peaked – to 2012, the total number of miles driven in America fell by 3.1 percent.[14]

The economic recession that officially began in December 2007 is responsible for some of the reduction in driving, but only a part of it. Per-capita driving had already begun to decline years before the recession began, and it has continued to decline even during the economic recovery.[15] In past recessions, driving either never fell below its pre-recession level or quickly recovered.[16] While rising unemployment during the recession surely contributed to declining driving, between 2001 and 2009, the VMT per employed worker fell from 12,900 to 11,800 (8.3 percent). Meanwhile the VMT per non-worker fell from 3,600 to 3,500 (3.6 percent).[17]

Reasons behind the Decline in Vehicle-Miles Traveled

Many of the trends that long encouraged Americans to drive more have recently reached their natural limits or have reversed directions.

- *Saturated with Driving:* In the decades after World War II, rising incomes, the development of new low-density suburbs, increased participation of women in the workforce, and improvements in vehicles and new highways put millions of new commuters on the roads. By the turn of the 21st century, however, these trends had largely played themselves out, and some had shown signs of beginning to reverse.

  - *Vehicle Ownership:* After decades of increase, the number of vehicles per licensed driver has declined by 4 percent since 2006, suggesting that Americans may have reached a limit on the number of vehicles they can beneficially use.[18]

  - *Driver's Licensing:* After peaking in 1992, the percent of driving-age (16 and older) Americans holding licenses has stagnated and then declined. By 2011, 86 percent of driving age Americans held licenses, the lowest percentage in 30 years.[19]

  - *Time Spent in Travel:* Americans may be hitting the limit on the amount of time they are willing to spend in their cars each day, and unless travel speeds increase – which haven't since the 1990s – they may be hitting the limit of the number of miles they are willing to drive each day.[20]

  - *Labor Force Participation:* Workers tend to drive more miles than non-workers, and after decades of increase, the share of Americans in the labor force has dropped from its 2000 peak of 67.3 percent to 63.2 percent – the lowest level since 1978.[21]

- *Demographics:* With people in their prime earning and child-rearing years tending to drive the most, and the baby boomers retiring, a greater share of Americans are entering age groups that have historically driven fewer miles.[22]

- *Cost of Gasoline:* For decades, relatively cheap gas helped fuel the Driving Boom, but from 2002 to 2012, the average inflation-adjusted price of a gallon of gasoline doubled and put car ownership out of reach for many families.[23] Prices vary up and down with various gluts and shortages, but are not expected to fall significantly over the long-term. With increased driving in places like China, India and Brazil, prices at the pump could instead rise further over time.

- *Rising Use of Transit and Other Transportation Modes:* Americans are increasingly choosing other modes of transportation – light rail, buses, trains, bicycles or walking – for trips they might once have taken by car. The recent advent of new technologies – from carsharing to real-time transit information – as well as the preference of members of the Millennial generation for walkable places and a wider variety of transportation options – has accelerated the trend toward reduced driving.[24]

The shift in long-term trends toward reduced driving is also reflected in urbanized areas where approximately 60 percent of American's driving takes place.[25]

Vehicle Travel per Capita

According to the Federal Highway Administration, between 2006 and 2011, the average number of vehicle-miles traveled per capita in all urban areas decreased from 8,600 to 8,450 miles.[26] This decline in VMT per capita stands in contrast to the decades of steady increase – from 1980 to 2000, the vehicle-miles traveled per capita in all urban areas grew by 48 percent.[27]

The number of vehicle-miles traveled (VMT) per capita declined in almost three-quarters – or **54 out of 74** – of America's large urbanized areas for which trends could be analyzed between 2006 and 2011. (See Figures 3, 4 and 5, and box entitled "Why Are the VMT Data Miss-ing for 26 of the 100 Largest Urbanized Areas?") The average decline in VMT per capita among these 74 urbanized areas was 4.8 percent.[28]

These figures may underestimate the decline in per-capita VMT, particularly in areas that have experienced rapid exurban population growth over the last decade. Per-capita VMT is calculated by dividing the number of miles driven within an urbanized area – regardless of where those drivers reside – by the number of people who live within its boundaries. Thus, the numbers presented here would be artificially inflated in areas that experienced an increase in the number of people *living* outside the urbanized area but *driving* a significant number of miles within it – and where that additional driving exceeds the additional driving from new residents in urbanized areas traveling outside the urbanized area to visit the exurbs.

For example, Valencia West, an exurb of Tucson located outside the urbanized

Figure 3: VMT per Capita Has Declined in Almost Three-Quarters of America's Largest Urbanized Areas (for which trends could be analyzed)

■ Urbanized Areas with DECREASES in VMT per Capita
■ Urbanized Areas with INCREASES in VMT per Capita

20

54
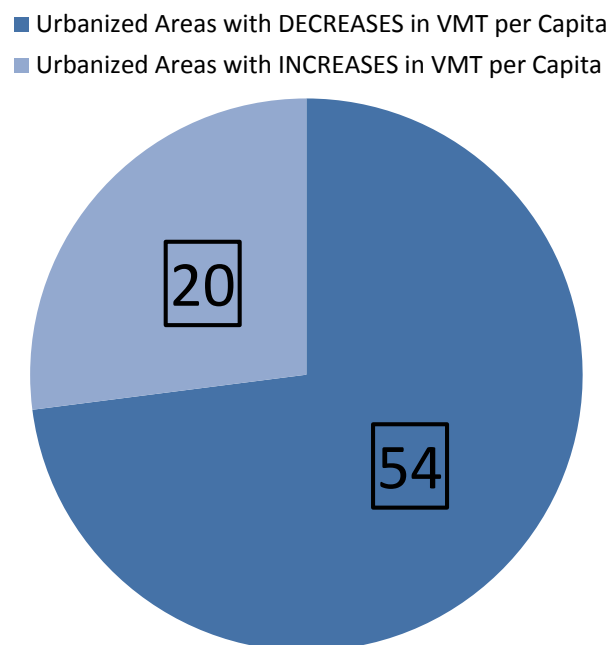
Figure 4: VMT per Capita in Many Urbanized Areas Has Fallen between 5 and 8 Percent
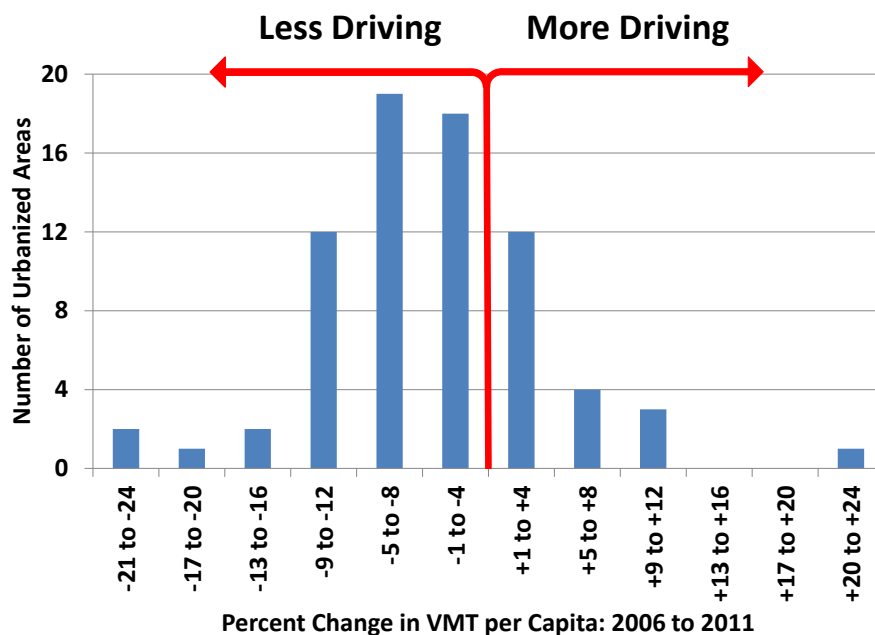
area has seen large population growth – from 2,380 in 2000, to 7,349 during 2005-2009, to 9,478 during 2007-2011.[29] Similarly, the population of Valley Center – an exurb located outside of San Diego's urbanized area – rose from 7,323 in 2000, to 8,650 during 2005-2009, to 9,381 during 2007-2011.[30] Assuming these bedroom communities are not big destinations for residents in the urbanized area, when new exurban residents drive into the urbanized area, they artificially inflate the urbanized area's per-capita VMT because the

Table 1: 10 Urbanized Areas with Largest Declines in VMT per Capita[33]

Rank	Urbanized Area	Percent decrease in VMT/capita from 2006 to 2011	Decrease in VMT/capita from 2006 to 2011
1	New Orleans, LA[34]	22.4%	1,852
2	Milwaukee, WI	20.9%	1,996
3	Madison, WI	17.7%	1,570
4	Harrisburg, PA	14.1%	1,581
5	Pittsburgh, PA	13.0%	1,068
6	Poughkeepsie-Newburgh, NY	12.4%	1,778
7	Tulsa, OK	11.5%	1,683
8	Jacksonville, FL	10.6%	1,431
9	Denver-Aurora, CO	10.6%	990
10	Pensacola, FL-AL	10.3%	1,475

Figure 5: VMT per Capita Has Declined Across the Country (2006 to 2011)[32]
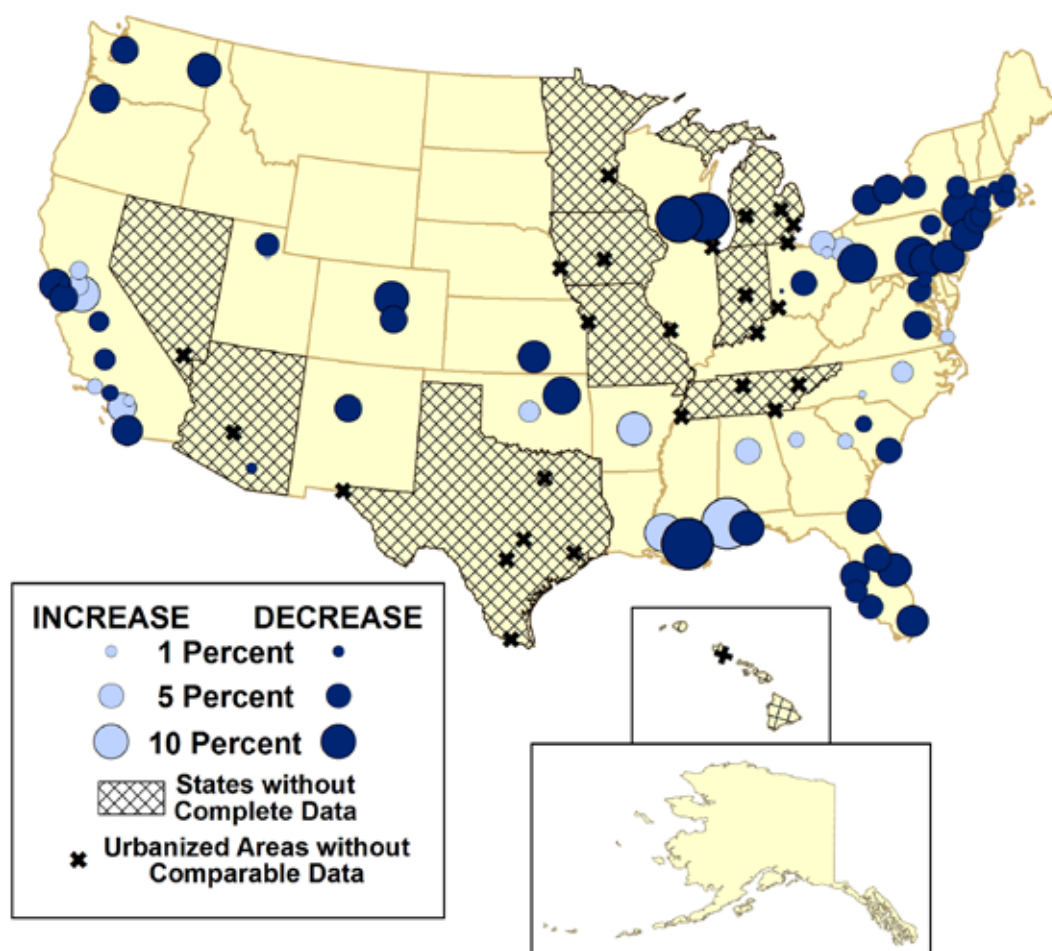
Note: States with shading are missing reliable data for all or part of an urbanized area, and 'X's denote the location of excluded urbanized areas. For further explanation see the text box titled "Why Are the VMT Data Missing for 26 of the 100 Largest Urbanized Areas?"

urbanized area's VMT increases, but the population remains unchanged.

New Orleans saw the largest drop in per-capita VMT – 22 percent – since 2006, possibly a result of the aftermath of Hurricane Katrina.[31] Two Wisconsin urbanized areas, Milwaukee and Madison, saw the second and third largest drops in per-capita VMT – 21 percent and 18 percent, respectively. Meanwhile, two Pennsylvania urbanized areas, Harrisburg and Pittsburgh, saw the fourth and fifth biggest drops in per-capita VMT – 14 percent and 13 percent, respectively. Increases in per-capita VMT were limited to scattered cities in the Southeast, Southwest and Midwest.

Figure 6: Total VMT Has Declined in Nearly Two-Thirds of America's Largest Urbanized Areas (for which trends could be analyzed)

■ Urbanized Areas with DECREASES in VMT
■ Urbanized Areas with INCREASES in VMT
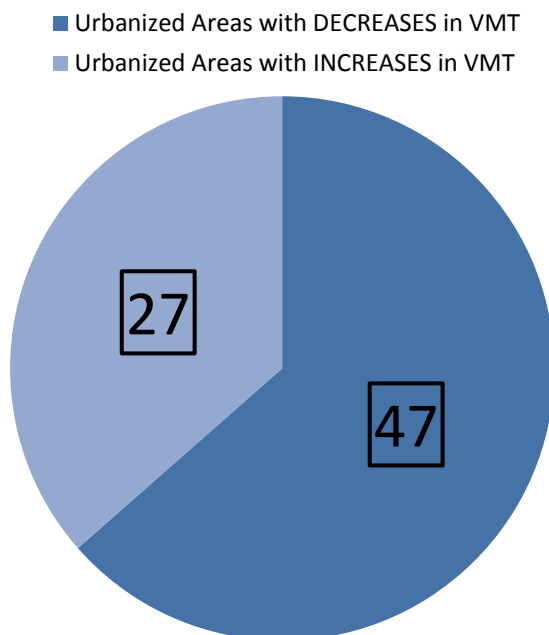
Total Vehicle Travel

The total number of vehicles-miles traveled declined in **47 out of 74** of America's large urbanized areas for which trends could be analyzed between 2006 and 2011, despite the addition of 2.5 million new residents in those 74 urbanized areas. (See Figure 6.)

Milwaukee and Madison in Wisconsin saw the largest drops in total VMT – 18 and 16 percent, respectively. The Poughkeepsie-Newburgh (NY) urbanized area saw the third largest drop in VMT – 14 percent. Two Pennsylvania urbanized areas, Pittsburgh and Harrisburg saw the fourth and fifth largest drops in VMT – 13 and 10 percent, respectively.

Decline in the Proportion of Workers Traveling to Work by Automobile

Americans are driving less in many different aspects of their lives – including traveling to work, shopping, and entertainment and to visit family.[37] There is no consistent source of data, however, that tracks variations in vehicle travel within urbanized areas for purposes other than commuting to work. Though the boundaries of urbanized areas change every decennial Census, journey to work data from the 2007-2011 American Community Survey use boundaries set by the 2000 Census.[38]

Why Are the VMT Data Missing for 26 of the 100 Largest Urbanized Areas?

About one-quarter of the nation's 100 largest urbanized areas are excluded from the VMT section of this report because VMT per capita and changes in VMT over time in these urbanized areas could not be readily determined with accuracy. The lack of accurate data is a result of states' failure to use standardized and up-to-date data collection methods that would make urbanized area boundaries consistent with those set by the most recent Census. States without standardized and up-to-date data collection methods include: Arizona, Hawaii, Indiana, Iowa, Michigan, Minnesota, Missouri, Nevada, Tennessee and Texas.[35]

How does the Federal Highway Administration collect data on VMT in urbanized areas? The Federal Highway Administration, which collects mandated transportation information from the states, uses urbanized area boundaries that are set by the U.S. Census, with occasional modifications from state Departments of Transportation (DOT). Every decade, the boundaries of an urbanized area are updated based on shifting population and development patterns. Some road segments and trips, therefore, that had counted as "rural" prior to these updates may be classified as "urban" after them – meaning that the amount of vehicle travel in an urban area may be shown to increase even if the actual amount of driving remains the same or declines.

Once the Census changes the boundaries, state departments of transportation (DOTs) must update their data collection and reporting methods to include the appropriate roads within the new boundaries and exclude others. When the Census replaced the 1990 definitions of urbanized areas to reflect the results of the 2000 Census, it was left to state DOTs to update their data reporting to reflect the new boundaries. Many state DOTs, however, failed to promptly update their boundaries, while others chose to change the Census Bureau's urbanized area boundaries (which they are permitted to do).

Our research found that while many states use up-to-date and comparable data, some of the urbanized area data on VMT from 2006 to 2011 collected by the Federal Highway Administration still count the VMT within the boundaries set by the 1990 Census or boundaries set by the state DOTs, rendering comparisons of vehicle travel across time difficult.

What does this mean for this report? By 2006, most states had updated their data reporting methods so that VMT was measured for the urbanized boundaries set by the 2000 Census, not the 1990 Census. For urbanized areas in these states with up-to-date and standardized VMT-reporting, researchers in this report could compare VMT across time (because there were consistent boundaries from 2006 to 2011) and calculate VMT per capita based on population numbers that matched the area used to tabulate VMT (the populations of urbanized areas in 2006 and 2011 are only available within the boundaries set by the 2000 Census).[36] These are the74 urbanized areas included in the VMT section of the report.

To preserve the accuracy of the data, this report excludes urbanized areas for which 2006 VMT data were still tabulated within the boundaries set by the 1990 Census or within other boundaries set by the state DOT. For these urbanized areas, accurate population data are not available and thus VMT per capita could not be calculated. In some cases, where an urbanized area spans across two or more state boundaries, the data was up-to-date in part of the urbanized area, but the urbanized area had to be excluded because a portion was within a state that had not performed the required update to its statistical boundaries.

The following urbanized areas were excluded from the VMT section of this report: Chicago (IL-IN), Detroit (MI), Minneapolis-St. Paul (MN), St. Louis (MO-IL), Cincinnati (OH-KY-IN), Kansas City (MO-KS), Las Vegas (NV), Indianapolis (IN), Louisville (KY-IN), Honolulu (HI), Omaha (NE-IA), Grand Rapids (MI), Toledo (OH-MI), Des Moines (IA), Flint (MI), Dallas-Fort Worth-Arlington (TX), Houston (TX), Phoenix-Mesa (AZ), San Antonio (TX), Memphis (TN-MS-AR), Austin (TX), Nashville-Davidson (TN), El Paso (TX-NM), McAllen (TX), Knoxville (TN), and Chattanooga (TN-GA).

What does this mean for transportation policy development? Citizens and decision-makers need accurate data on vehicle travel and the use of other modes of transportation to discern trends in travel and properly allocate funds among various locations and priorities. Without accurate VMT data, decision-makers cannot make fully informed decisions.

To fix the process for collecting and reporting VMT data, the U.S. Department of Transportation should require states to follow the same protocols for measuring and communicating urbanized area VMT. All states should have to use boundaries for urbanized areas set by the most recent decennial census to report transportation data, and all states should switch from the boundaries set by the old census to the boundaries set by the new census in the same year. Accurate population statistics should accompany VMT data and all data should be made available to the public and decision-makers in a timely manner.

The U.S. Census collects and posts information on how commuters travel to work. Commuting represents 28 percent of household vehicle miles and is a key generator of traffic congestion in urbanized areas, making it an especially important form of travel to track and measure.[39]

Census data show that for decades, the percent of Americans who drove to work steadily increased. From 1960 to 1980, the percent of workers who commuted by private vehicle – either alone or in a carpool (as opposed to a public bus) – increased from 64.0 percent to 84.1 percent.[40] By 2000, the proportion of private vehicle commuters had increased to 87.9 percent. However, since 2000, the proportion of workers commuting by private vehicle has declined. By 2007-2011,

the proportion of workers commuting by private vehicle had fallen to 86.3 percent.

This decline was slightly greater in urbanized areas. From 2000 to 2007-2011, the proportion of workers commuting by private vehicle in all urbanized areas fell from 86.8 percent to 84.7 percent. Much of this decline has resulted from a fall in carpooling. From 2000 to 2007-2011, the proportion of workers in the 100 biggest urbanized areas who carpooled fell from 11.8 percent to 9.7 percent.

The decline in the proportion of residents commuting by private car has taken place in practically every large urbanized area. The proportion of residents commuting by private vehicle – either alone or in a carpool – declined in 99 out of 100 of America's largest urbanized areas between 2000 and 2007-2011. (See Figure 7.) The largest declines were in New York-Newark; Washington, D.C.; Austin;

and Poughkeepsie-Newburgh, each of which experienced at least a 4 percent drop in the percentage of residents commuting to work by car.

One reason for the decline in traveling by private car to work is that more and more people are working from home, thanks to the increasing use of telecommuting. The proportion of residents working from home has increased in every one of the 100 largest urbanized areas since 2000. The largest increases occurred in Pensacola (FL), Mission Viejo (CA), Columbia (SC) and Austin, which all saw an increase of at least 2.5 percent in the share of residents working from home. The only urbanized area out of the 100 most populous that experienced an increase in the proportion of workers traveling by private car was New Orleans, where people's transportation habits have been affected by Hurricane Katrina.

TABLE 2: 10 Urbanized Areas with the Largest Decline in Proportion of Workers Commuting by Private Car or Van

Rank	Urbanized Area	Change in the proportion of workers commuting to work by private car or van (2000 to 2007-2011)
1	New York-Newark, NY-NJ-CT	-4.8%
2	Washington, DC-VA-MD	-4.7%
3	Austin, TX	-4.5%
4	Poughkeepsie-Newburgh, NY	-4.0%
5	San Francisco-Oakland, CA	-3.9%
6	Portland, OR-WA	-3.6%
7	Seattle, WA	-3.6%
8	Colorado Springs, CO	-3.4%
9	Charlotte, NC-SC	-3.4%
10	Mission Viejo, CA	-3.1%

Figure 7: The Proportion of Workers Traveling to Work by Car Has Fallen Across the Country (2000 to 2007-2011
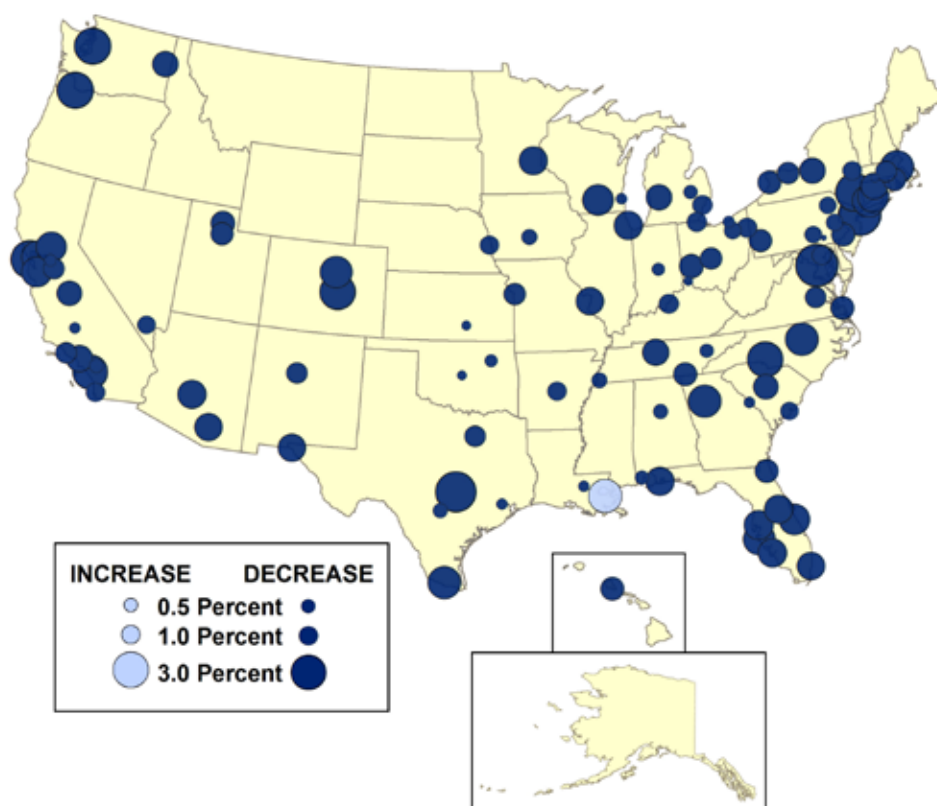
Decline in the Proportion of Households with Vehicles

In addition to the decline in vehicle travel in many urbanized areas and the increase in the share of residents working from home, the share of households reporting that they do not have a vehicle has increased in many urbanized areas. It is unknown whether this increase in carless households is the result of changing preferences or economic hardship, but it does represent a dramatic reversal of the trend toward increased vehicle ownership since at least the 1960s.[41] According to data from the U.S. Census, the proportion of households across the country without a car increased modestly from 8.8 percent to 9.3 percent from 2006 to 2011.[42]

The increase in the proportion of households without a car was slightly greater in urban areas. From 2006 to 2011, the proportion of households without a car in all urban areas increased from 10.2 percent to 11.0 percent.[43]

Looking at the 100 largest urbanized areas, we see a clear departure from past trends.

- The proportion of households without cars has increased in **84 out of the 100** largest urbanized areas from 2006 to 2011. In these 100 urbanized areas, the proportion of households without cars increased from 11.4 percent to 12.2 percent. (See Figure 8.) The greatest increases were in Poughkeepsie-Newburgh (NY), New Orleans (LA), and Bakersfield (CA), which all saw at least a 3 percent increase in the proportion of households without a car.

- The proportion of households with two cars or more decreased in **86 out of the 100** largest urbanized areas from 2006 to 2011, with an average decrease of 1.7 percent. The greatest decreases were in Cape Coral (FL), New Orleans (LA), and Fresno (CA), which all saw at least 6 percent of households go from possessing two or more vehicles to one or zero.

Figure 8: The Proportion of Households Without Vehicles Has Increased across the Country (2006 to 2011)
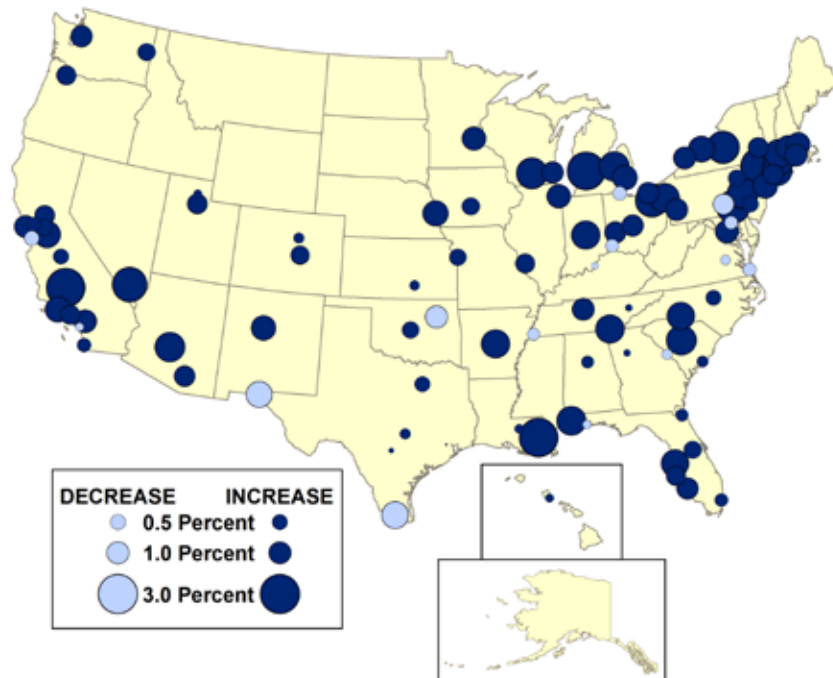
Table 3: 10 Urbanized Areas with the Largest Increases in the Percent of Households without Vehicles[44]

Rank	Urbanized Area	Change in percent of households with no vehicle from 2006 to 2011
1	Poughkeepsie-Newburgh, NY	3.2%
2	New Orleans, LA	3.1%
3	Bakersfield, CA	3.0%
4	Grand Rapids, MI	2.9%
5	Las Vegas, NV	2.4%
6	Akron, OH	2.2%
7	Lancaster, PA	2.2%
8	Syracuse, NY	2.1%
9	Allentown-Bethlehem, PA-NJ	2.0%
10	Madison, WI	2.0%

Use of Non-Driving Modes of Transportation Has Increased in Most of America's Large Urbanized Areas

While residents of America's urbanized areas have reduced their time behind the wheel, they have simultaneously increased their use of non-driving modes of transportation.

Increase in Public Transit Use

Over the past several years, Americans have been riding on transit more. According to the Federal Transit Administration's National Transit Database, the total annual miles traveled on public transit increased from 45.1 billion to 54.3 billion – a 20 percent jump – from 2000 to 2011. This increase in the miles traveled has occurred even while many transit systems have been forced to cut services and increase fares.[45]

Data from the National Transit Database show that the increased mileage on public transit use is taking place in most urbanized areas.

- The number of passenger-miles traveled (PMT) per capita on transit increased in **60 out of 98** of America's large urbanized areas whose trends could be analyzed between 2005 and 2010. (See Figure 9 and box entitled "Why Are Public Transit Data Missing for Two of the 100 Largest Urbanized Areas?") In these 98 areas, the number of passenger-miles traveled per capita increased 7.1 percent.[46]

- The *total* number of passenger-miles traveled increased in **67 out of these 98** urbanized areas between 2005 and 2010.

One reason some urbanized areas are experiencing increases in PMT is that residents are taking more trips on transit.

- The number of passenger trips per capita increased in **57 out of the 98** large urbanized areas whose trends could be analyzed between 2005 and

2010. During that time, the 98 urbanized areas saw a 4.3 percent increase in the number of passenger trips per capita.

- The total number of passenger trips increased in **68 out of these 98** urbanized areas between 2005 and 2010.

Figure 9: Passenger Miles Traveled per Capita on Public Transit Has Increased in Urbanized Areas across the Country (2005 to 2010)
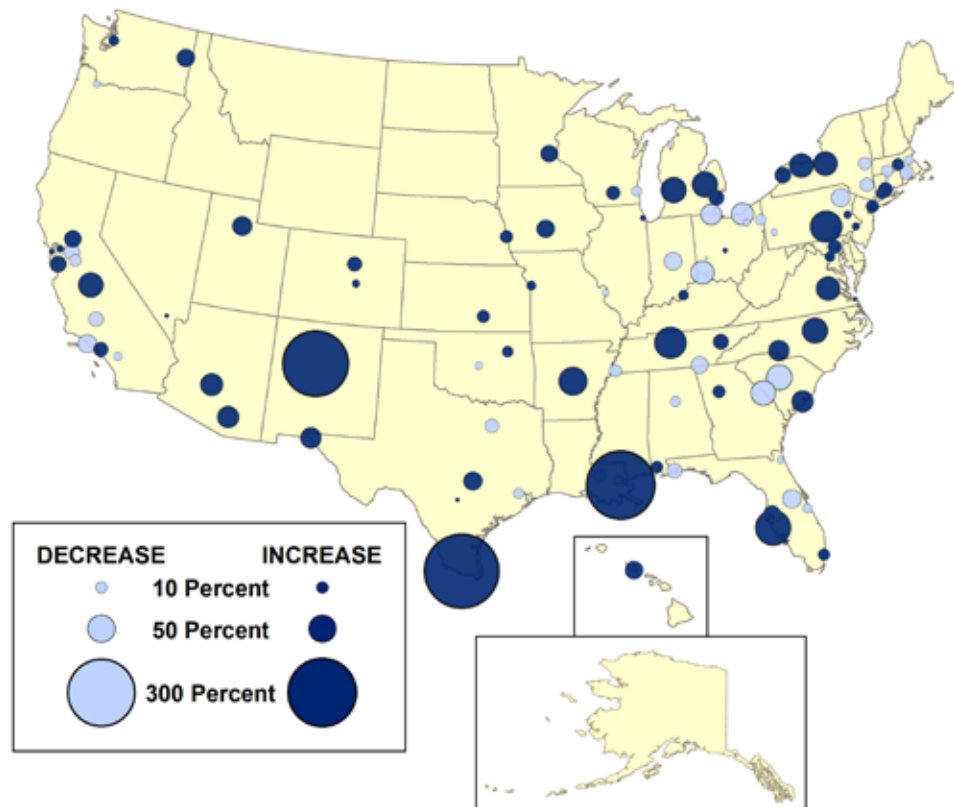
Why Are Public Transit Data Missing for Two of the 100 Largest Urbanized Areas?

This report focuses on the transportation trends in America's 100 most populous urbanized areas, but Mission Viejo (CA) and Ogden-Layton (UT) are excluded from the public transit analysis because data on the passenger miles and trips traveled in these urbanized areas are not available for 2005. While the National Transit Database has made available the number of passenger miles and trips traveled in each urbanized area for 2008, 2009, 2010 and 2011, it has not made the data available for years before 2008. Our researchers calculated the passenger miles and trips traveled in the other 98 urbanized areas for 2005 by adjusting data reported by transit agencies in 2005 based on the agencies' primary urbanized areas. However, neither Mission Viejo (CA) nor Ogden-Layton (UT) were listed as the primary urbanized area for any transit agencies in 2005, and thus were excluded from our analysis on public transit use.

Table 4: 10 Urbanized Areas with the Largest Increases in Passenger-Miles Traveled per Capita on Public Transit[47]

Rank	Urbanized Area	Percent increase or decrease in PMT per capita from 2005 to 2010
1	McAllen, TX	366%[48]
2	New Orleans, LA	312%[49]
3	Albuquerque, NM	288%
4	Sarasota-Bradenton, FL	80%
5	Harrisburg, PA	68%
6	Nashville-Davidson, TN	68%
7	Little Rock, AR	53%
8	Flint, MI	45%
9	Grand Rapids, MI	44%
10	Raleigh, NC	43%

Part of the increase in public transit use is due to the opening of new routes and lines. In Albuquerque's urbanized area, for example, the Rio Metro Regional Transit District opened new commuter rail service between Albuquerque and Santa Fe.[50] In the Seattle urbanized area, which had a 7.2 percent increase in the passenger-miles traveled per person, SoundTransit opened a new light rail service from downtown to the airport.[51]

Increase in the Proportion of Commuters Who Bike to Work

According to the National Household Travel Survey, from 2001 to 2009, the number of miles biked on America's streets and bike paths per person increased by one-third.[52] In a 2009 survey conducted by the Bureau of Transportation Statistics, 70 percent of respondents believed that having bike paths or lanes

Table 5: 10 Urbanized Areas with the Largest Increases in Percent of Workers Who Biked to Work

Rank	Urbanized Area	Increase in percent of workers who biked to work from 2000 to 2007-2011
1	Portland, OR-WA	1.7%
2	Madison, WI	1.4%
3	San Francisco-Oakland, CA	0.6%
4	Denver-Aurora, CO	0.5%
5	Minneapolis-St. Paul, MN	0.5%
6	Sacramento, CA	0.4%
7	Boston, MA-NH-RI	0.4%
8	Rochester, NY	0.4%
9	Seattle, WA	0.3%
10	New Haven, CT	0.3%

to shopping centers, work or school was important.[53]

While national data on all bicycle travel in urbanized areas are not available, the U.S. Census Bureau provides information on bicycle travel *to and from work*. From 2006 to 2011, the proportion of workers biking to work in America's 100 largest urbanized areas increased from 0.42 percent to 0.61 percent.[54] While bike commuters make up a small proportion of total workers, the rate of increase in bike commuting over the past decade has been dramatic and the trend is happening across many different urbanized areas:

• The proportion of commuters bicycling to work increased in **85 out of 100** of America's largest urbanized areas between 2000 and 2007-2011. (See Figure 10.) The urbanized areas of Portland (OR-WA) and Madison (WI) saw the largest increases in proportion of commuters bicycling to work – with increases of 1.7 percent (from 0.9 percent to 2.5 percent) and 1.4 percent (from 2.2 percent to 3.7 percent), respectively.[55]

• The total number of workers who biked to work increased in **91 out of 100** of America's largest urbanized areas between 2000 and 2007-2011. Portland's urbanized area spanning between Oregon and Washington saw a threefold increase in the number of commuters bicycling to work – from 6,800 to 21,800 residents.

Figure 10: The Proportion of Workers Who Bike to Work Has Increased across the Country (2000 to 2007-2011)
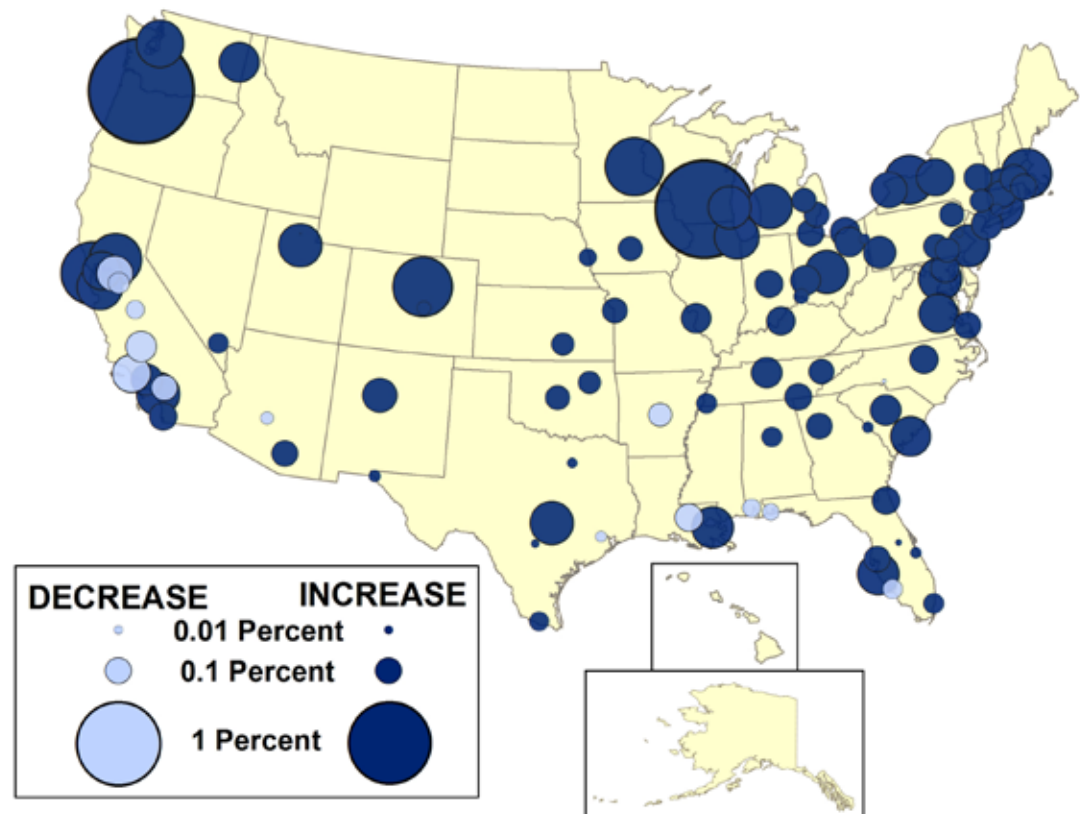
The proportion of workers who biked to work in the Honolulu urbanized area is not apparent here because it remained comparatively unchanged.

Driving Is Declining in Urbanized Areas Less Affected by the Recession

D riving is declining in a wide variety of urbanized areas. According to some indicators, the economies in urbanized areas that have seen large declines in driving are no weaker than the economies of urbanized areas that have seen increases or small declines in driving. In fact, the economies of urbanized areas with large declines in driving appear to have been *less affected* by the recession according to unemployment, income and poverty indicators.[56] (See Figure 11.)

Unemployment

Urbanized areas with the biggest declines in driving did not experience greater increases in unemployment than those with smaller declines in driving. Between 2006 and 2011, the average increase in the unemployment rates in the 15 urbanized areas with the highest per-capita declines in VMT was 3.9 percent, while average increase in all other urbanized areas was 4.6 percent.

Income

Urbanized areas with the biggest declines in driving did not experience greater declines in median household income than those with smaller declines in driving. Between 2006 and 2011, the average decrease in household median incomes for the 15 urbanized areas with the highest per-capita declines in VMT was 5.8 percent, while the average decrease in all other urbanized areas was 7.1 percent.

Poverty level

Urbanized areas with bigger declines in driving did not experience greater increases in poverty than those with smaller declines. Between 2006 and 2011, the average increase in the poverty rate of the 15 urbanized areas with the highest per-capita declines in VMT was 2.7 percent, while the average increase in all other urbanized areas was 3.6 percent.

Figure 11: The Economies of Urbanized Areas with Large Declines in Driving Appear to Have Been Less Affected by the Recession than the Economies of Urbanized Areas That Have Seen Small Declines or Increases in Driving

- ■ 15 Urbanized Areas with the Highest Per-Capita Declines in VMT
- ■ All Other Urbanized Areas

	Average Increase in Unemployment Rate	Average Decrease in Median Income	Average Increase in Poverty Level
15 Urbanized Areas with the Highest Per-Capita Declines in VMT	3.9%	5.8%	2.7%
All Other Urbanized Areas	4.6%	7.1%	3.6%
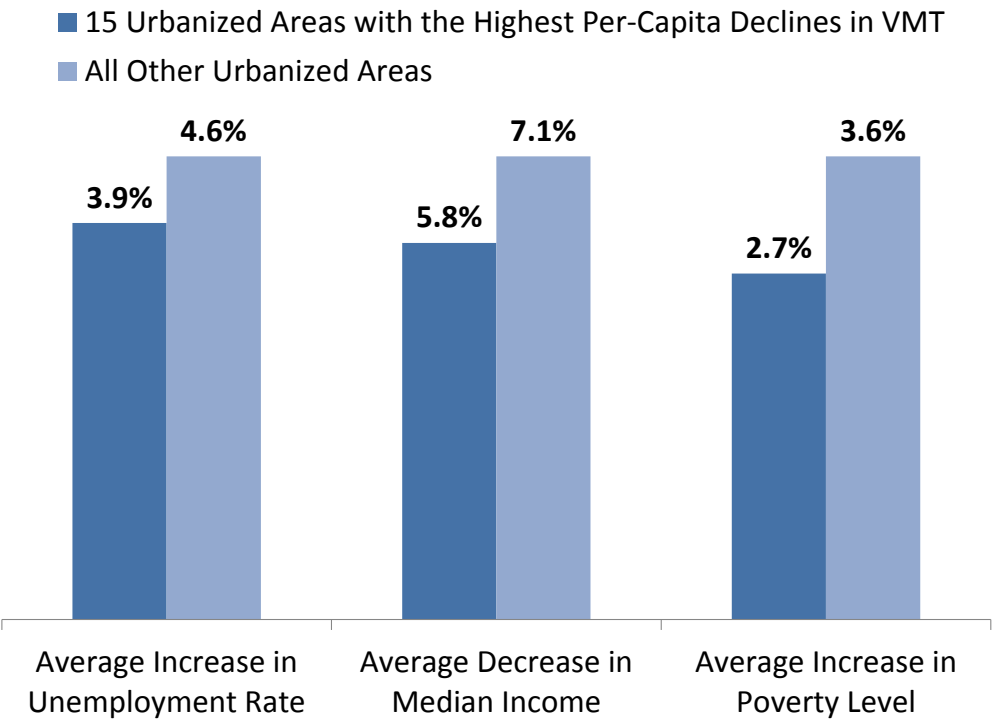
Policy Recommendations

For decades, federal and local governments have made massive investments in new road and highway capacity on the assumption that driving will continue to increase at a rapid and steady pace. The recent decline in driving and increase in non-driving transportation in U.S. urbanized areas from coast to coast show that those assumptions are no longer necessarily correct.

Local, state and federal officials need to revisit their current transportation plans and transportation investment priorities in light of the recent changes in driving patterns. By doing so, decision-makers will be able to save money that might otherwise be wasted on unnecessary boondoggle highway projects and instead invest in other important priorities such as repairing our existing roads and bridges and expanding access to the broader range of transportation options – including public transit, bicycling and walking – that Americans increasingly seek. Specifically, public officials should:

Revisit transportation plans – Many metropolitan areas and states continue to set their transportation investment priorities based on Driving Boom-era assumptions about future trends in vehicle travel. The 2013 U.S. PIRG Education Fund/Frontier Group report, *A New Direction*, argues that recent federal forecasts are likely to dramatically overstate future vehicle travel, leading to inaccurate judgments about the need for investment in highways. Similar, overly aggressive projections of future driving continue to shape public policy at the metropolitan and state level.

With Americans driving fewer miles on average than at any time since the

mid-1990s, the time has come to take a fresh look at transportation plans that have roots in Driving Boom-era assumptions. Local, metropolitan, state and federal transportation agencies should re-examine transportation plans based on new assumptions that reflect the recent decline in driving and new information about how changes in technology, the economy and consumer preferences are likely to affect the demand for driving in the future.

Reallocate resources – A rethinking of transportation plans using the best, most current information is likely to reveal that many projects no longer make sense, as well as new priorities that demand increased investment. Short-term and long-term transportation plans are filled with highway projects that were planned under very different expectations of future travel growth. Many of these "legacy projects" were originally proposed decades ago, and approved based on assessments of future travel since shown to be incorrect.[57]

Transportation agencies should reevaluate the need for new or expanded highways, cancelling those projects that are no longer justifiable given new trends in driving. Transportation agencies should reallocate resources to projects that serve the growing demand for public transit, bicycling and walking infrastructure, as well as to the repair of existing roads and bridges, which has often been neglected in the push to add new highway capacity.

Remove barriers to expanded transportation options – Over the last century, the United States has built a policy infrastructure that gives cars top priority in addressing transportation problems. Local planning and zoning rules often prevent compact, mixed-use development and require developers to provide copious amounts of parking (passing the costs along to customers and workers) without providing similar access to transit

riders, bicyclists and pedestrians. Numerous states have constitutional provisions or statutory limitations that prevent the use of gasoline tax revenue for public transit or other, non-driving forms of transportation – even in cases where those investments would reduce congestion for drivers. In addition, the emergence of a variety of new technology-enabled transportation options – such as bikesharing, carsharing and ridesharing – has run into roadblocks in some places where local regulations have not yet caught up to the pace of new innovations.

Local, state and federal officials should identify policies that stack the deck in favor of auto-oriented development or stand in the way of non-driving modes of transportation and work to remove those barriers.

In many places, the biggest barrier to non-driving transportation options is a lack of funding. Many cities that were forced to cut back on transit service during the recession experienced discouraging declines in ridership – even as transit ridership boomed nationwide.[58] Local, state and federal officials should identify stable, long-term funding sources for transit that can withstand economic downturns and enable transit agencies to take advantage of the increased demand for non-driving modes of travel. In addition, current inequities in federal transportation policy – such as the higher percentage of local investment typically required for new transit projects as opposed to new highways – should also be corrected.

Use innovative travel tools and services. New technologies – such as real-time travel information – and new approaches have the potential to address congestion more quickly and often less expensively than highway expansion. Local, state and federal governments should investigate the potential for new technologies to address urban transportation

challenges and lower barriers to the use of non-driving modes of transportation.

In addition to employing new technologies, transportation officials should take innovative approaches to transportation problems that prioritize multimodal connections and break down modal "silos" in transportation funding and administration.

Get better data. As described in this report, tracking changes in vehicle travel patterns among various urbanized areas in the United States is extremely difficult. Inconsistent transportation data, infrequent travel surveys and other data problems make it hard for local, regional, state and national decision-makers to understand how driving trends are changing and the factors that may be causing those changes.

Officials at all levels should invest in developing better data to address transportation challenges – eliminating inconsistences in data reporting among various states, conducting national travel surveys on a more frequent or continuous basis, and taking advantage of new information sources, including voluntarily provided real-time information from vehicle GPS systems and "crowdsourced" data from transportation system users.

Methodology

Defining "Urbanized Areas"

Data for this report came from U.S. Department of Transportation and U.S. Census Bureau, and are reported by "urbanized area." According to the U.S. Census, an urbanized area is a densely developed area with 50,000 or more residents that includes both a central city and built-up areas (including suburbs) adjacent to it. Urbanized areas are generally larger than a single municipality and smaller than a metropolitan area (the boundaries of which are determined by county lines). (See Figure 12.) The Census redefines the boundaries for each urbanized area every decennial census.

To compile a list of the 100 most populous urbanized areas, researchers used Table *P001: Total Population* from the U.S. Census (2000 Summary File 1).

Sources

Population data for urbanized areas in 2005, 2006, 2010 and 2011 were used to calculate per-capita figures throughout the report. These data come from table *B01003: Total Population* of the U.S. Census (American Community Survey 1-Year Estimates). The American Community Survey is based on a sample, meaning that the 1-year estimates have margins of error larger than the 3-year and 5-year estimates or the 100 percent count of population in the decennial census.

Figure 12: An "Urbanized Area" Is Larger than a Municipality and Smaller than a Metropolitan Statistical Area[59]
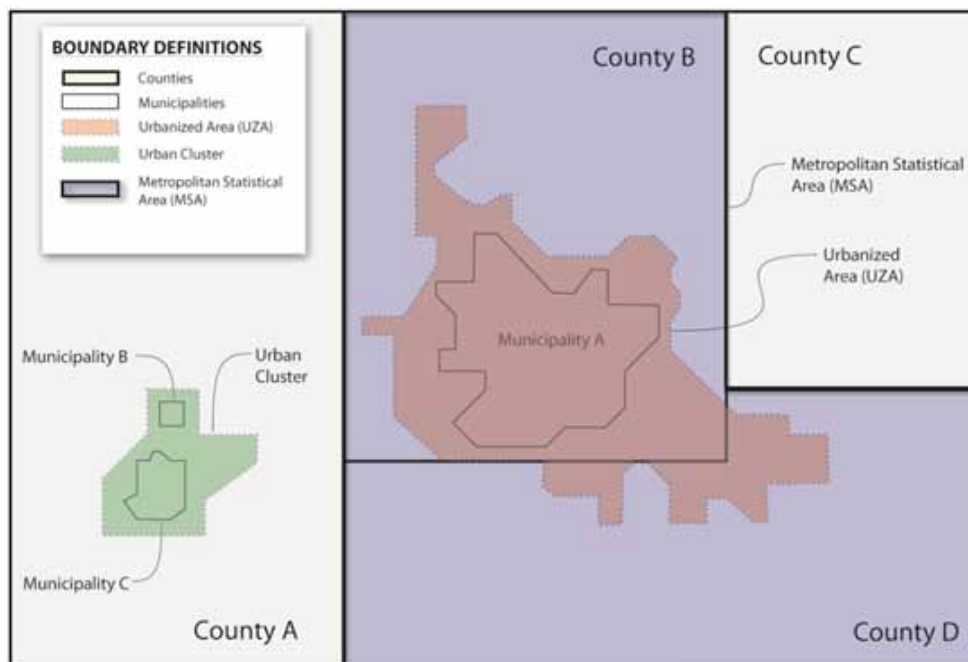
Below are the sources for other data in the report:

- Vehicle-miles traveled:

  ° VMT for urbanized areas: table *HM-71* (sometimes called "Miles and Daily Vehicle-Miles of Travel") from the Department of Transportation's Federal Highway Administration's *Highway Statistics* series of reports, available at www.fhwa.dot.gov/policyinformation/statistics.cfm.

  ° VMT for total U.S. for 2012: U.S. Department of Transportation, Federal Highway Administration, *December 2012 Traffic Volume Trends*, downloaded from www.fhwa.dot.gov/policyinformation/travel_monitoring/12dectvt/page2.cfm, 9 October 2013.

  ° VMT for total U.S. and urbanized areas combined: *table VM-2* (sometimes called "Functional System Travel – Annual Vehicle Miles") from the Department of Transportation's Federal Highway Administration's *Highway Statistics* series of reports, available at www.fhwa.dot.gov/policyinformation/statistics.cfm.

- Passenger-miles traveled and passenger-trips traveled on public transportation:

  ° The 2010 data come from the *RY 2010 UZA Allocation* table in the Department of Transportation's Federal Transit Administration's National Transit Database (NTD). The 2005 data were derived from the NTD's *RY 2008 UZA Allocation* table and *Data Table 19* (called "Transit Operating Statistics: Services Supplied and Consumed") of NTD's 2005 and 2008 data

tables. For 2007 and prior years, the NTD does not make data available on passenger-miles traveled and passenger-trips traveled within each urbanized area. Rather, the data available are the passenger-miles traveled and passenger-trips traveled by each transit agency and that transit agency's primary urbanized area. Since many transit agencies serve more than one urbanized area, researchers used the 2008 data to allocate the miles and trips traveled by each transit agency in 2005 to the various urbanized areas and to areas not covered by any urbanized area.

- ° Passenger-miles traveled and passenger trips data for 2011 were not used because, by 2011, some transit agencies had adopted the urbanized area boundaries set by the 2010 Census, making it difficult to determine if increases in the passenger-miles traveled and passenger-trips were due to increases in use or expansions in boundaries to include new routes and lines.

- ° NTD data are available at www. ntdprogram.gov/ntdprogram/ data.htm.

- Journey to work data:

  - ° 2000 data: table *P030: Means of Transportation to Work for Workers 16 Years and over* from the U.S. Census (2000 Summary File 3).

  - ° 2007-2011 data: tables *B08301* and *B08101: Means of Transportation to Work* (Universe: Workers 16 years and over) of the U.S. Census (2007-2011 American Community Survey 5-Year Estimates).

- Households with access to automobiles: table *B25044: Tenure by Vehicles Available* (Universe: Occupied housing units) from the U.S. Census (2006 and 2011 American Community Survey 1-Year Estimates).

- 2007 to 2011 unemployment rate: table *S2301: Employment Status* from the U.S. Census (2007-2011 American Community Survey 5-Year Estimates). The U.S. Census and the Bureau of Labor Statistics use the same unemployment definition.

- 2006 to 2011 change in unemployment rate: table *S2301: Employment Status* from the U.S. Census (2006 and 2011 American Community Survey 1-Year Estimates).

- 2007 to 2011 median income: table *B19049: Median Household Income in the Past 12 Months (In 2011 Inflation-adjusted Dollars) by Age of Householder* (Universe: Households) from the U.S. Census (2007-2011 American Community Survey 5-Year Estimates).

- 2006 to 2011 change in median income: 2006 data from table *B19049: Median Household Income in the Past 12 Months (In 2006 Inflation-adjusted Dollars) by Age of Householder* (Universe: Households) from the U.S. Census (2006 American Community Survey). 2011 data from table *B19049: Median Household Income in the Past 12 Months (In 2011 Inflation-adjusted Dollars) by Age of Householder* (Universe: Households) from the U.S. Census (2011 American Community Survey 1-Year Estimates).

- 2007 to 2011 percent of residents in poverty: table *S1701: Poverty Status in the Past 12 Months* from the U.S. Census (2007-2011 American Community Survey 5-Year Estimates).

- 2006 to 2011 change in percent of residents in poverty: table *S1701: Poverty Status in the Past 12 Months* from the U.S. Census (2006 and 2011 American Community Survey 1-Year Estimate).

For all Census sources, the geography was set to "All Urbanized Areas within United States," "United States – Urban" and "United States," and tables were downloaded from factfinder2.census.gov.

The sources collect data through different methods:

- The *American Community Survey* (ACS) gives questionnaires to about one in 38 households per year, and participants respond either online or via mail. The Census Bureau will call or visit households that do not respond to the initial survey.[60] The ACS's five-year estimates include the surveys for the five preceding years.

- The *Decennial Census* counts every resident in the United States. Households that do not return their census forms are counted by Census workers who collect data in neighborhoods.[61]

- The *Federal Highway Administration* (FHWA) receives driving data submitted by states, which use traffic volume counts to extrapolate the vehicle-miles traveled within an urbanized area.[62]

- The *National Household Travel Survey* (NHTS) conducts telephone surveys of households across the United States. In the 2009 survey, the sample size was 150,147.[63]

- The National Transit Database (NTD) collects data on passenger miles and trips from transit agencies, which usually extrapolate these numbers based on samples of riders.[64]

Exclusion of Urbanized Areas from VMT Analysis

Twenty-six of the 100 most populous urbanized areas were excluded from the VMT analysis because VMT per capita and changes in VMT over time in these urbanized areas could not be accurately determined. (For further explanation see the text box entitled "Why Are the VMT Data Missing for 26 of the 100 Largest Urbanized Areas?" on page 18.)

The following urbanized areas were excluded because the VMT in 2006 were calculated with boundaries from the 1990 Census: Chicago (IL-IN), Detroit (MI), Minneapolis-St. Paul (MN), St. Louis (MO-IL), Cincinnati (OH-KY-IN), Kansas City (MO-KS), Las Vegas (NV), Indianapolis (IN), Louisville (KY-IN), Honolulu (HI), Omaha (NE-IA), Grand Rapids (MI), Toledo (OH-MI), Des Moines (IA), and Flint (MI). The VMT for these urbanized areas in 2004 were calculated within the boundaries set by the 1990 Census, and the square mileage of the urbanized areas did not change between 2004 and 2006. (*Table HM-72: Urbanized Area Summaries: Selected Characteristics* from the Federal Highway Administration's *Highway Statistics* 2004 and 2006 reports, available at www.fhwa.dot. gov/policyinformation/statistics.cfm.) The 2004 data table is the most recent data table that reports which boundaries (those set by the 1990 Census or those set by the 2000 Census) each urbanized area was using to measure VMT.

The following urbanized areas were excluded because the boundaries used to calculate VMT were altered between 2006 and 2008: Dallas-Fort Worth-Arlington (TX), Houston (TX), Phoenix-Mesa (AZ), San Antonio (TX), Memphis (TN-MS-AR), Austin (TX), Nashville-Davidson (TN), El Paso (TX-NM), McAllen (TX), Knoxville (TN), and Chattanooga (TN-GA). The VMT

for these urbanized areas were calculated within square mileage that changed between 2006 and 2008 (*Table HM-72: Urbanized Area Summaries: Selected Characteristics* from the Federal Highway Administration's *Highway Statistics* 2006, 2007 and 2008 reports, available at www.fhwa.dot.gov/policyinformation/statistics.cfm). No changes were made to the square mileage used to calculate VMT within urbanized areas from 2009 to 2011.[65]

The 74 urbanized areas included in the VMT analysis used the boundaries set by the 2000 Census to calculate VMT in 2006. These urbanized areas either used the 2000 boundaries in 2004 to calculate VMT and the square mileage of the urbanized area did not change between 2004 and 2006 or used the 1990 boundaries in 2004 and the square mileage changed by 2006. Milwaukee (WI), Wichita (KS), Madison (WI), and Charlotte (NC-SC) used boundaries that were slightly altered from those set by the 2000 Census to calculate VMT in 2006, but were included because the boundaries remained unchanged from 2006 onward, maintaining the reliability of the VMT per capita numbers.

Appendix A: Summary Data for Transportation Trends by Urbanized Area

Urbanized Area	Percent change in vehicle-miles traveled (VMT)/capita from 2006 to 2011	Percent change in passenger miles traveled (PMT) on transit/capita from 2005 to 2010	Change in proportion of workers who commuted by car from 2000 to 2007-2011	Change in proportion of workers who biked to work from 2000 to 2007-2011	Change in proportion of workers who worked from home from 2000 to 2007-2011
Akron, OH	1.2%	-2.8%	-0.8%	0.1%	0.5%
Albany, NY	-4.3%	-10.3%	-1.0%	0.1%	0.7%
Albuquerque, NM	-5.9%	288.3%	-1.1%	0.2%	0.6%
Allentown-Bethlehem, PA-NJ	-0.1%	4.3%	-0.8%	0.0%	1.4%
Atlanta, GA	2.0%	11.5%	-2.9%	0.1%	2.0%
Augusta-Richmond County, GA-SC	2.3%	-39.7%	-0.3%	0.0%	0.7%
Austin, TX	N/A	22.9%	-4.5%	0.3%	2.6%
Bakersfield, CA	-3.8%	-13.3%	-0.3%	-0.1%	0.3%
Baltimore, MD	-1.8%	12.1%	-1.0%	0.1%	0.5%
Baton Rouge, LA	12.4%	-10.3%	-0.4%	-0.1%	0.3%
Birmingham, AL	5.8%	-7.5%	-0.5%	0.1%	0.5%
Boston, MA-NH-RI	-2.7%	-6.4%	-3.0%	0.4%	1.0%
Bridgeport-Stamford, CT-NY	-5.5%	8.6%	-2.9%	0.0%	0.5%
Buffalo, NY	-7.5%	16.9%	-1.5%	0.2%	0.3%
Cape Coral, FL	-5.0%	0.8%	-2.2%	-0.1%	1.7%
Charleston-North Charleston, SC	-5.5%	29.5%	-0.9%	0.2%	1.7%
Charlotte, NC-SC	0.5%	28.5%	-3.4%	0.0%	2.0%
Chattanooga, TN-GA	N/A	-19.6%	-1.4%	0.1%	0.8%
Chicago, IL-IN	N/A	2.6%	-2.1%	0.3%	1.3%
Cincinnati, OH-KY-IN	N/A	-34.8%	-0.2%	0.0%	0.9%
Cleveland, OH	5.1%	-34.2%	-0.4%	0.1%	0.6%
Colorado Springs, CO	-6.0%	4.2%	-3.4%	0.0%	1.3%
Columbia, SC	-2.3%	-42.7%	-1.7%	0.1%	2.7%
Columbus, OH	-5.7%	1.6%	-1.2%	0.3%	1.4%
Concord, CA	-1.1%	2.8%	-2.9%	0.2%	1.6%
Dallas-Fort Worth-Arlington, TX	N/A	-12.6%	-1.2%	0.0%	1.1%
Dayton, OH	-0.2%	-0.9%	-1.5%	0.1%	0.8%
Denver-Aurora, CO	-10.6%	13.5%	-2.8%	0.5%	1.2%

As some data from the ACS one-year estimates can have relatively large margins of error (for example, the 2011 population of Modesto – the least populous urbanized area in this report – has a margin of error of 2.0 percent), the Census only applies the one-year estimates to populations of 65,000 and larger.[66] While three- or five-year estimates would have smaller margins of error, this report uses the one-year estimates in some cases because the most recent data that reflect changing transportation habits are from 2011, and a three- or five-year estimate would capture the miles and trips traveled in earlier years. In addition, the least populous urbanized areas in this report have populations that are almost five times larger than the threshold (65,000) used to report one-year estimates.

Urbanized Area	Percent change in vehicle-miles traveled (VMT)/capita from 2006 to 2011	Percent change in passenger miles traveled (PMT) on transit/capita from 2005 to 2010	Change in proportion of workers who commuted by car from 2000 to 2007-2011	Change in proportion of workers who biked to work from 2000 to 2007-2011	Change in proportion of workers who worked from home from 2000 to 2007-2011
Des Moines, IA	N/A	20.9%	-0.6%	0.1%	0.4%
Detroit, MI	N/A	15.8%	-1.1%	0.1%	0.9%
El Paso, TX-NM	N/A	29.0%	-2.0%	0.0%	0.6%
Flint, MI	N/A	44.8%	-0.5%	0.1%	0.8%
Fresno, CA	-3.4%	40.2%	-1.7%	-0.1%	0.7%
Grand Rapids, MI	N/A	43.5%	-1.8%	0.3%	1.1%
Harrisburg, PA	-14.1%	68.2%	-0.8%	0.1%	0.3%
Hartford, CT	-2.2%	-1.5%	-1.9%	0.1%	0.8%
Honolulu, HI	N/A	21.5%	-1.5%	0.0%	0.7%
Houston, TX	N/A	-7.6%	-0.3%	0.0%	0.7%
Indianapolis, IN	N/A	-20.7%	-0.5%	0.1%	0.5%
Jacksonville, FL	-10.6%	-3.5%	-1.5%	0.1%	1.8%
Kansas City, MO-KS	N/A	6.2%	-1.3%	0.1%	0.6%
Knoxville, TN	N/A	15.0%	-0.5%	0.1%	0.9%
Lancaster, PA	-9.9%	-3.6%	-0.1%	0.1%	0.5%
Las Vegas, NV	N/A	1.2%	-0.8%	0.1%	0.6%
Little Rock, AR	9.6%	53.2%	-1.0%	-0.1%	0.8%
Los Angeles-Long Beach-Santa Ana, CA	-2.3%	13.6%	-2.0%	0.2%	1.1%
Louisville, KY-IN	N/A	7.0%	-1.1%	0.1%	0.4%
Madison, WI	-17.7%	12.8%	-2.7%	1.4%	0.5%
McAllen, TX	N/A	366.4%	-3.0%	0.1%	1.8%
Memphis, TN-MS-AR	N/A	-11.2%	-0.6%	0.1%	0.4%
Miami, FL	-8.6%	9.2%	-2.1%	0.1%	1.2%
Milwaukee, WI	-20.9%	-6.8%	-0.3%	0.3%	0.6%
Minneapolis-St. Paul, MN	N/A	19.8%	-2.2%	0.5%	1.0%
Mission Viejo, CA	6.9%	N/A	-3.1%	0.3%	2.8%
Mobile, AL	23.1%	9.1%	-0.5%	0.0%	0.9%
Modesto, CA	10.8%	-9.0%	-1.2%	-0.1%	0.9%
Nashville-Davidson, TN	N/A	68.2%	-1.9%	0.1%	1.4%
New Haven, CT	-3.8%	14.2%	-2.6%	0.3%	1.0%
New Orleans, LA	-22.4%	311.7%	2.7%	0.3%	0.4%
New York-Newark, NY-NJ-CT	-8.7%	10.3%	-4.8%	0.1%	0.9%
Ogden-Layton, UT	-4.8%	N/A	-1.6%	0.0%	0.6%
Oklahoma City, OK	3.9%	-3.7%	-0.2%	0.1%	0.4%
Omaha, NE-IA	N/A	11.3%	-1.0%	0.0%	0.7%
Orlando, FL	-6.0%	-23.2%	-2.2%	0.0%	1.4%

Urbanized Area	Percent change in vehicle-miles traveled (VMT)/capita from 2006 to 2011	Percent change in passenger miles traveled (PMT) on transit/capita from 2005 to 2010	Change in proportion of workers who commuted by car from 2000 to 2007-2011	Change in proportion of workers who biked to work from 2000 to 2007-2011	Change in proportion of workers who worked from home from 2000 to 2007-2011
Oxnard, CA	2.2%	-23.5%	-1.1%	-0.2%	1.1%
Palm Bay-Melbourne, FL	-9.3%	-6.1%	-2.5%	0.0%	1.6%
Pensacola, FL-AL	-10.3%	-15.1%	-2.2%	0.0%	4.6%
Philadelphia, PA-NJ-DE-MD	-9.4%	3.6%	-1.5%	0.3%	0.7%
Phoenix-Mesa, AZ	N/A	33.5%	-2.2%	0.0%	1.6%
Pittsburgh, PA	-13.0%	-2.9%	-1.4%	0.2%	1.1%
Portland, OR-WA	-7.0%	-2.9%	-3.6%	1.7%	1.6%
Poughkeepsie-Newburgh, NY	-12.4%	-12.0%	-4.0%	0.1%	2.4%
Providence, RI-MA	-3.9%	-12.6%	-1.3%	0.1%	0.9%
Raleigh, NC	3.9%	43.3%	-2.9%	0.1%	2.4%
Richmond, VA	-6.5%	39.4%	-1.2%	0.2%	1.4%
Riverside-San Bernardino, CA	1.1%	-4.8%	-0.5%	-0.1%	0.7%
Rochester, NY	-7.5%	37.4%	-1.2%	0.4%	0.7%
Sacramento, CA	2.8%	20.5%	-2.4%	0.4%	1.5%
Salt Lake City, UT	0.4%	26.3%	-1.3%	0.3%	0.3%
San Antonio, TX	N/A	1.5%	-0.6%	0.0%	0.9%
San Diego, CA	-7.9%	-1.4%	-0.9%	0.1%	1.6%
San Francisco-Oakland, CA	-8.3%	1.6%	-3.9%	0.6%	2.0%
San Jose, CA	-6.9%	18.4%	-2.5%	0.3%	1.4%
Sarasota-Bradenton, FL	-4.4%	80.4%	-2.7%	0.3%	1.4%
Scranton, PA	-3.3%	-24.6%	-0.8%	0.1%	0.3%
Seattle, WA	-6.4%	7.2%	-3.6%	0.3%	0.9%
Spokane, WA-ID	-9.5%	21.0%	-1.8%	0.2%	0.9%
Springfield, MA-CT	-2.5%	-9.5%	-0.2%	0.2%	1.0%
St. Louis, MO-IL	N/A	-3.2%	-2.0%	0.1%	0.9%
Stockton, CA	3.9%	-18.5%	-0.4%	-0.2%	1.3%
Syracuse, NY	-4.8%	39.4%	-1.9%	0.2%	0.5%
Tampa-St. Petersburg, FL	-7.2%	18.9%	-2.3%	0.1%	1.8%
Toledo, OH-MI	N/A	-28.8%	-1.0%	0.1%	0.6%
Tucson, AZ	-1.0%	31.0%	-2.0%	0.1%	0.9%
Tulsa, OK	-11.5%	8.5%	-0.4%	0.1%	0.4%
Virginia Beach, VA	1.9%	1.1%	-1.5%	0.1%	1.9%
Washington, DC-VA-MD	-4.9%	7.0%	-4.7%	0.3%	0.7%
Wichita, KS	-8.9%	10.5%	-0.3%	0.1%	0.3%
Worcester, MA-CT	-1.6%	9.3%	-1.1%	0.1%	1.3%
Youngstown, OH-PA	5.4%	-8.3%	-1.0%	0.0%	0.6%

Appendix B: Vehicle-Miles Traveled

Urbanized Area	Percent change in VMT/capita from 2006 to 2011	Rank of decline in VMT/capita	Percent change in VMT from 2006 to 2011	Rank of decline in VMT	VMT/capita in 2006	VMT/capita in 2011	VMT in 2006 (billions)	VMT in 2011 (billions)
Akron, OH	1.2%	58	-0.1%	45	9,379	9,490	5.3	5.3
Albany, NY	-4.3%	38	-1.2%	41	10,268	9,823	5.8	5.8
Albuquerque, NM	-5.9%	29	-0.1%	46	8,250	7,760	5.5	5.5
Allentown-Bethlehem, PA-NJ	-0.1%	54	0.7%	52	7,935	7,929	4.9	5.0
Atlanta, GA	2.0%	60	1.9%	57	11,463	11,696	46.4	47.3
Augusta-Richmond County, GA-SC	2.3%	62	6.8%	65	9,999	10,224	3.4	3.6
Bakersfield, CA	-3.8%	40	-0.5%	43	6,510	6,261	3.0	3.0
Baltimore, MD	-1.8%	49	0.5%	50	9,013	8,854	19.2	19.3
Baton Rouge, LA	12.4%	73	14.0%	73	9,600	10,787	4.9	5.5
Birmingham, AL	5.8%	69	4.4%	63	13,764	14,565	9.1	9.5
Boston, MA-NH-RI	-2.7%	44	0.0%	47	8,429	8,200	34.2	34.2
Bridgeport-Stamford, CT-NY	-5.5%	32	-2.8%	31	8,290	7,836	7.5	7.3
Buffalo, NY	-7.5%	20	-8.4%	10	8,719	8,063	8.3	7.6
Cape Coral, FL	-5.0%	33	-3.8%	22	12,890	12,242	4.9	4.7
Charleston-North Charleston, SC	-5.5%	31	-1.3%	40	9,587	9,055	4.3	4.2
Charlotte, NC-SC	0.5%	56	9.2%	68	12,303	12,362	11.0	12.0
Cleveland, OH	5.1%	67	1.3%	54	8,285	8,705	14.3	14.5
Colorado Springs, CO	-6.0%	28	-3.5%	27	8,310	7,813	4.0	3.9
Columbia, SC	-2.3%	46	2.2%	59	10,533	10,286	4.7	4.8
Columbus, OH	-5.7%	30	0.3%	49	9,956	9,385	11.5	11.5
Concord, CA	-1.1%	51	-2.1%	35	9,369	9,264	5.4	5.3
Dayton, OH	-0.2%	53	0.6%	51	10,084	10,068	7.0	7.0
Denver-Aurora, CO	-10.6%	9	-6.2%	14	9,363	8,373	19.3	18.1
Fresno, CA	-3.4%	42	-4.2%	21	7,562	7,303	4.6	4.5
Harrisburg, PA	-14.1%	4	-9.6%	5	11,201	9,620	4.2	3.8
Hartford, CT	-2.2%	48	-0.8%	42	9,361	9,157	8.2	8.1
Jacksonville, FL	-10.6%	8	-9.2%	7	13,511	12,080	12.7	11.5
Lancaster, PA	-9.9%	11	-2.3%	33	7,750	6,981	2.6	2.5
Little Rock, AR	9.6%	71	9.7%	69	12,303	13,490	4.5	5.0
Los Angeles-Long Beach-Santa Ana, CA	-2.3%	47	-2.8%	30	8,295	8,107	101.7	98.8
Madison, WI	-17.7%	3	-15.5%	2	8,855	7,285	3.1	2.6
Miami, FL	-8.6%	17	-6.0%	15	9,229	8,433	48.9	46.0
Milwaukee, WI	-20.9%	2	-18.2%	1	9,570	7,573	12.4	10.1
Mission Viejo, CA	6.9%	70	5.7%	64	7,812	8,350	4.3	4.6
Mobile, AL	23.1%	74	19.0%	74	10,287	12,662	3.3	4.0
Modesto, CA	10.8%	72	8.7%	67	5,684	6,299	1.9	2.1
New Haven, CT	-3.8%	41	-2.2%	34	9,267	8,918	5.0	4.9

Vehicle–Miles Traveled continued from page 40

Urbanized Area	Percent change in VMT/capita from 2006 to 2011	Rank of decline in VMT/capita	Percent change in VMT from 2006 to 2011	Rank of decline in VMT	VMT/capita in 2006	VMT/capita in 2011	VMT in 2006 (billions)	VMT in 2011 (billions)
New Orleans, LA	-22.4%	1	-3.8%	24	8,265	6,413	5.6	5.4
New York-Newark, NY-NJ-CT	-8.7%	16	-8.0%	11	6,231	5,686	113.5	104.4
Ogden-Layton, UT	-4.8%	36	1.6%	55	8,487	8,081	3.9	4.0
Oklahoma City, OK	3.9%	64	10.9%	71	13,379	13,896	10.4	11.5
Orlando, FL	-6.0%	27	0.2%	48	11,908	11,188	15.1	15.1
Oxnard, CA	2.2%	61	10.8%	70	7,474	7,638	2.5	2.8
Palm Bay-Melbourne, FL	-9.3%	14	-9.2%	6	12,547	11,375	5.4	4.9
Pensacola, FL-AL	-10.3%	10	-9.2%	9	14,387	12,912	4.7	4.3
Philadelphia, PA-NJ-DE-MD	-9.4%	13	-7.8%	12	7,538	6,827	39.3	36.2
Pittsburgh, PA	-13.0%	5	-13.1%	4	8,221	7,153	13.9	12.1
Portland, OR-WA	-7.0%	23	-1.6%	39	7,411	6,889	12.9	12.7
Poughkeepsie-Newburgh, NY	-12.4%	6	-14.1%	3	14,393	12,615	5.6	4.8
Providence, RI-MA	-3.9%	39	-4.4%	20	8,255	7,931	9.7	9.3
Raleigh, NC	3.9%	66	11.6%	72	13,090	13,606	8.4	9.4
Richmond, VA	-6.5%	25	-2.0%	36	11,428	10,688	9.8	9.6
Riverside-San Bernardino, CA	1.1%	57	2.1%	58	8,791	8,888	15.9	16.3
Rochester, NY	-7.5%	21	-6.9%	13	9,060	8,383	6.2	5.8
Sacramento, CA	2.8%	63	2.3%	60	8,284	8,516	12.5	12.8
Salt Lake City, UT	0.4%	55	3.4%	62	8,195	8,230	7.7	8.0
San Diego, CA	-7.9%	19	-3.5%	28	9,149	8,423	24.9	24.0
San Francisco-Oakland, CA	-8.3%	18	-3.7%	25	7,938	7,277	25.4	24.4
San Jose, CA	-6.9%	24	-3.1%	29	8,561	7,974	13.6	13.1
Sarasota-Bradenton, FL	-4.4%	37	-5.1%	17	10,602	10,140	6.3	6.0
Scranton, PA	-3.3%	43	-4.9%	18	7,856	7,596	3.0	2.8
Seattle, WA	-6.4%	26	-0.5%	44	9,028	8,448	26.0	25.8
Spokane, WA-ID	-9.5%	12	-3.7%	26	8,275	7,486	2.8	2.7
Springfield, MA-CT	-2.5%	45	-1.7%	38	9,079	8,852	5.3	5.2
Stockton, CA	3.9%	65	8.1%	66	7,062	7,337	2.4	2.6
Syracuse, NY	-4.8%	35	-3.8%	23	9,563	9,104	3.8	3.7
Tampa-St. Petersburg, FL	-7.2%	22	-5.8%	16	10,691	9,922	23.6	22.2
Tucson, AZ	-1.0%	52	-1.9%	37	8,819	8,728	6.8	6.7
Tulsa, OK	-11.5%	7	-9.2%	8	14,659	12,976	8.3	7.5
Virginia Beach, VA	1.9%	59	2.7%	61	8,996	9,164	12.9	13.3
Washington, DC-VA-MD	-4.9%	34	1.8%	56	8,384	7,972	35.0	35.7
Wichita, KS	-8.9%	15	-4.9%	19	9,991	9,100	4.2	4.0
Worcester, MA-CT	-1.6%	50	0.8%	53	10,079	9,922	4.4	4.4
Youngstown, OH-PA	5.4%	68	-2.3%	32	8,806	9,284	3.6	3.5

Appendix C: Public Transit

Appendix C-1: Transit Passenger-Miles Traveled

Urbanized Area	Percent change in PMT/capita from 2005 to 2010	Rank of percent increase in PMT/ capita	Percent change in PMT from 2005 to 2010	Rank of percent increase in PMT	PMT/ capita in 2005	PMT/ capita in 2010	PMT in 2005 (millions)	PMT in 2010 (millions)
Akron, OH	-2.8%	64	-0.3%	68	42.9	41.7	23.4	23.3
Albany, NY	-10.3%	80	-2.7%	74	97.3	87.3	52.4	51.0
Albuquerque, NM	288.3%	3	330.2%	2	33.2	129	21.4	92.0
Allentown-Bethlehem, PA-NJ	4.3%	50	9.1%	51	43.0	44.9	25.8	28.1
Atlanta, GA	11.5%	37	15.8%	38	212	236	812	940
Augusta-Richmond County, GA-SC	-39.7%	97	-37.2%	98	14.4	8.7	4.9	3.1
Austin, TX	22.9%	21	37.1%	16	118	145	113	155
Bakersfield, CA	-13.3%	86	-10.2%	84	64.2	55.6	29.5	26.5
Baltimore, MD	12.1%	36	17.7%	34	212	237	436	514
Baton Rouge, LA	-10.3%	81	-2.4%	73	34.3	30.8	16.4	16.0
Birmingham, AL	-7.5%	75	-10.0%	83	30.3	28.1	20.0	18.0
Boston, MA-NH-RI	-6.4%	73	-0.7%	69	447	418	1,744	1,731
Bridgeport-Stamford, CT-NY	8.6%	44	14.5%	42	178	194	157	179
Buffalo, NY	16.9%	29	19.0%	32	83.5	97.7	76.8	91.4
Cape Coral, FL	0.8%	60	2.0%	65	38.0	38.3	14.3	14.6
Charleston-North Charleston, SC	29.5%	17	41.0%	15	26.6	34.4	11.5	16.3
Charlotte, NC-SC	28.5%	19	47.0%	10	106	137	89.5	132
Chattanooga, TN-GA	-19.6%	89	-10.9%	86	33.9	27.2	11.4	10.1
Chicago, IL-IN	2.6%	54	2.8%	62	457	469	3,801	3,909
Cincinnati, OH-KY-IN	-34.8%	96	-32.8%	95	110	71.8	163	109
Cleveland, OH	-34.2%	95	-35.7%	96	172	113	296	190
Colorado Springs, CO	4.2%	51	10.4%	48	35.8	37.3	16.9	18.7
Columbia, SC	-42.7%	98	-36.5%	97	38.8	22.2	16.1	10.2
Columbus, OH	1.6%	56	8.9%	52	52.6	53.4	60.3	65.7
Concord, CA	2.8%	53	3.7%	60	608	624	342	355
Dallas-Fort Worth-Arlington, TX	-12.6%	85	-8.4%	80	111	96.9	486	445
Dayton, OH	-0.9%	61	0.3%	67	64.7	64.1	43.4	43.6
Denver-Aurora, CO	13.5%	34	19.6%	31	210	238	424	507
Des Moines, IA	20.9%	24	25.3%	24	66.4	80.3	25.4	31.8
Detroit, MI	15.8%	30	11.5%	47	69.5	80.5	265	295
El Paso, TX-NM	29.0%	18	36.2%	18	84.3	109	57.7	78.6
Flint, MI	44.8%	8	36.4%	17	58.2	84.3	20.9	28.5
Fresno, CA	40.2%	11	42.6%	14	53.2	74.5	32.4	46.2
Grand Rapids, MI	43.5%	9	44.4%	12	49.7	71.3	27.0	39.0

Transit Passenger–Miles Traveled continued from page 42

Urbanized Area	Percent change in PMT/ capita from 2005 to 2010	Rank of percent increase in PMT/ capita	Percent change in PMT from 2005 to 2010	Rank of percent increase in PMT	PMT/ capita in 2005	PMT/ capita in 2010	PMT in 2005 (mil- lions)	PMT in 2010 (mil- lions)
Harrisburg, PA	68.2%	5	83.3%	4	38.8	65.3	13.9	25.5
Hartford, CT	-1.5%	63	2.7%	63	73.5	72.5	62.6	64.3
Honolulu, HI	21.5%	22	33.0%	20	421	512	302	402
Houston, TX	-7.6%	76	0.5%	66	134	124	552	555
Indianapolis, IN	-20.7%	90	-17.0%	92	35.5	28.1	44.2	36.7
Jacksonville, FL	-3.5%	68	-1.4%	71	72.1	69.6	67.0	66.0
Kansas City, MO-KS	6.2%	49	8.7%	53	43.4	46.1	60.2	65.4
Knoxville, TN	15.0%	31	24.2%	27	26.3	30.3	11.5	14.3
Lancaster, PA	-3.6%	69	4.5%	59	102	98.0	33.2	34.7
Las Vegas, NV	1.2%	58	2.3%	64	132	134	195	200
Little Rock, AR	53.2%	7	57.6%	8	23.9	36.7	8.6	13.6
Los Angeles-Long Beach-Santa Ana, CA	13.6%	33	14.0%	43	240	273	2,897	3,302
Louisville, KY-IN	7.0%	47	13.8%	44	66.2	70.8	56.9	64.7
Madison, WI	12.8%	35	21.5%	30	123	139	40.2	48.8
McAllen, TX	366.4%	1	405.0%	1	0.2	0.8	0.1	0.5
Memphis, TN-MS-AR	-11.2%	82	-10.8%	85	67.9	60.3	65.0	58.0
Miami, FL	9.2%	42	13.1%	46	155	170	806	911
Milwaukee, WI	-6.8%	74	-3.2%	76	124	115	158	153
Minneapolis-St. Paul, MN	19.8%	26	24.3%	26	166	199	393	489
Mobile, AL	9.1%	43	7.5%	55	20.8	22.7	6.6	7.1
Modesto, CA	-9.0%	78	-8.5%	81	38.7	35.3	12.8	11.7
Nashville-Davidson, TN	68.2%	6	82.4%	5	44.5	74.8	33.1	60.3
New Haven, CT	14.2%	32	18.7%	33	297	340	156	185
New Orleans, LA	311.7%	2	254.1%	3	18.0	73.9	17.2	60.9
New York-Newark, NY-NJ-CT	10.3%	40	13.5%	45	993	1,095	17,639	20,027
Oklahoma City, OK	-3.7%	70	3.7%	61	18.2	17.5	13.8	14.3
Omaha, NE-IA	11.3%	38	16.9%	36	24.5	27.3	15.5	18.1
Orlando, FL	-23.2%	91	-16.7%	91	131	101	160	133
Oxnard, CA	-23.5%	92	-16.0%	90	93.9	71.9	31.9	26.8
Palm Bay-Melbourne, FL	-6.1%	72	-5.2%	78	34.4	32.3	14.7	13.9
Pensacola, FL-AL	-15.1%	87	-8.6%	82	20.1	17.1	6.4	5.8
Philadelphia, PA-NJ-DE-MD	3.6%	52	8.4%	54	353	366	1,787	1,936
Phoenix-Mesa, AZ	33.5%	15	30.0%	22	82.2	110	260	338
Pittsburgh, PA	-2.9%	66	-1.9%	72	193	187	320	314

Urbanized Area	Percent change in PMT/ capita from 2005 to 2010	Rank of percent increase in PMT/ capita	Percent change in PMT from 2005 to 2010	Rank of percent increase in PMT	PMT/ capita in 2005	PMT/ capita in 2010	PMT in 2005 (mil- lions)	PMT in 2010 (mil- lions)
Portland, OR-WA	-2.9%	65	5.2%	58	277	269	466	490
Poughkeepsie-Newburgh, NY	-12.0%	83	-3.6%	77	751	661	258	249
Providence, RI-MA	-12.6%	84	-11.7%	87	123	108	143	126
Raleigh, NC	43.3%	10	60.0%	7	43.8	62.8	26.3	42.0
Richmond, VA	39.4%	13	51.4%	9	44.8	62.4	37.0	56.0
Riverside-San Bernardino, CA	-4.8%	71	-1.3%	70	78.3	74.6	135	134
Rochester, NY	37.4%	14	43.7%	13	65.7	90.3	43.7	62.8
Sacramento, CA	20.5%	25	22.8%	29	96.7	117	142	174
Salt Lake City, UT	26.3%	20	34.3%	19	138	174	125	167
San Antonio, TX	1.5%	57	10.0%	49	128	130	176	193
San Diego, CA	-1.4%	62	5.5%	57	206	203	544	575
San Francisco-Oakland, CA	1.6%	55	9.1%	50	604	614	1,873	2,044
San Jose, CA	18.4%	28	25.1%	25	162	192	249	311
Sarasota-Bradenton, FL	80.4%	4	82.2%	6	22.8	41.1	13.2	24.1
Scranton, PA	-24.6%	93	-19.8%	93	51.6	38.9	18.5	14.8
Seattle, WA	7.2%	46	16.5%	37	367	393	1,014	1,181
Spokane, WA-ID	21.0%	23	28.7%	23	121	146	40.9	52.7
Springfield, MA-CT	-9.5%	79	-6.2%	79	62.8	56.8	35.0	32.8
St. Louis, MO-IL	-3.2%	67	-3.0%	75	137	133	284	276
Stockton, CA	-18.5%	88	-13.1%	89	130	106	44.0	38.3
Syracuse, NY	39.4%	12	45.6%	11	69.5	96.9	26.8	39.0
Tampa-St. Petersburg, FL	18.9%	27	23.5%	28	51.7	61.4	111	137
Toledo, OH-MI	-28.8%	94	-28.9%	94	51.6	36.7	25.0	17.8
Tucson, AZ	31.0%	16	32.0%	21	81.5	107	61.7	81.5
Tulsa, OK	8.5%	45	14.5%	41	25.3	27.5	14.0	16.0
Virginia Beach, VA	1.1%	59	6.4%	56	79.5	80.4	110	117
Washington, DC-VA-MD	7.0%	48	15.5%	39	594	635	2,422	2,798
Wichita, KS	10.5%	39	15.3%	40	26.4	29.2	11.2	13.0
Worcester, MA-CT	9.3%	41	17.6%	35	67.9	74.2	28.7	33.7
Youngstown, OH-PA	-8.3%	77	-11.8%	88	17.3	15.9	6.7	5.9

Appendix C-2: Transit Passenger Trips

Urbanized Area	Percent change in passenger trips/capita from 2005 to 2010	Rank of percent increase in trips/ capita	Percent change in passenger trips from 2005 to 2010	Rank of percent increase in trips	Passen- ger trips /capita in 2005	Passen- ger trips /capita in 2010	Passen- ger trips in 2005 (millions)	Passen- ger trips in 2010 (millions)
Akron, OH	-8.0%	76	-5.5%	77	11.7	10.8	6.4	6.0
Albany, NY	8.5%	32	17.7%	26	21.7	23.5	11.7	13.7
Albuquerque, NM	43.2%	7	58.7%	4	12.2	17.5	7.9	12.5
Allentown-Bethlehem, PA-NJ	15.7%	19	21.0%	21	8.2	9.5	4.9	5.9
Atlanta, GA	0.9%	55	4.8%	59	39.2	39.6	150	158
Augusta-Richmond County, GA-SC	-35.2%	96	-32.5%	96	2.8	1.8	0.9	0.6
Austin, TX	-3.1%	63	8.1%	49	34.6	33.6	33.2	35.9
Bakersfield, CA	3.1%	49	6.9%	53	15.0	15.5	6.9	7.4
Baltimore, MD	-5.3%	70	-0.5%	70	47.3	44.8	97.4	96.9
Baton Rouge, LA	-31.5%	94	-25.4%	91	10.1	6.9	4.8	3.6
Birmingham, AL	-28.7%	92	-30.7%	95	5.8	4.1	3.8	2.7
Boston, MA-NH-RI	-14.7%	85	-9.4%	82	102	87.3	399	362
Bridgeport-Stamford, CT-NY	6.2%	37	11.9%	34	17.5	18.6	15.4	17.2
Buffalo, NY	12.0%	26	14.0%	29	25.6	28.6	23.5	26.8
Cape Coral, FL	4.0%	44	5.2%	56	6.7	7.0	2.5	2.6
Charleston-North Charleston, SC	260.3%	2	292.4%	1	2.5	9.0	1.1	4.3
Charlotte, NC-SC	18.2%	17	35.2%	12	21.2	25.0	17.8	24.1
Chattanooga, TN-GA	9.3%	29	21.1%	20	7.5	8.2	2.5	3.1
Chicago, IL-IN	3.7%	46	4.0%	61	72.3	75.0	601	625
Cincinnati, OH-KY-IN	-26.6%	89	-24.2%	90	20.3	14.9	30.0	22.7
Cleveland, OH	-33.6%	95	-35.1%	97	39.1	26.0	67.3	43.6
Colorado Springs, CO	7.3%	34	13.7%	30	5.0	5.4	2.4	2.7
Columbia, SC	-35.4%	97	-28.5%	94	6.6	4.2	2.7	2.0
Columbus, OH	8.9%	31	16.8%	28	12.9	14.0	14.8	17.3
Concord, CA	-4.7%	66	-3.8%	73	55.9	53.3	31.5	30.3
Dallas-Fort Worth-Arlington, TX	-21.4%	88	-17.6%	88	18.7	14.7	82.0	67.6
Dayton, OH	-27.0%	91	-26.2%	92	18.2	13.3	12.2	9.0
Denver-Aurora, CO	3.5%	48	9.0%	43	40.7	42.2	82.3	89.7
Des Moines, IA	7.0%	35	10.9%	38	11.1	11.8	4.2	4.7
Detroit, MI	12.5%	25	8.3%	47	12.4	13.9	47.2	51.1
El Paso, TX-NM	12.6%	24	18.8%	24	18.4	20.7	12.6	15.0
Flint, MI	31.1%	10	23.6%	18	13.0	17.0	4.7	5.8
Fresno, CA	53.9%	4	56.6%	5	18.8	28.9	11.4	17.9
Grand Rapids, MI	50.3%	6	51.2%	7	11.9	17.9	6.5	9.8
Harrisburg, PA	18.2%	16	28.8%	14	6.3	7.5	2.3	2.9
Hartford, CT	4.6%	43	9.0%	44	15.5	16.2	13.2	14.4

Urbanized Area	Percent change in passenger trips/capita from 2005 to 2010	Rank of percent increase in trips/ capita	Percent change in passenger trips from 2005 to 2010	Rank of percent increase in trips	Passen-ger trips /capita in 2005	Passen-ger trips /capita in 2010	Passen-ger trips in 2005 (millions)	Passen-ger trips in 2010 (millions)
Honolulu, HI	-0.3%	58	9.1%	42	93.5	93.2	67.0	73.1
Houston, TX	-20.9%	87	-13.9%	86	23.0	18.2	94.5	81.4
Indianapolis, IN	-4.8%	67	-0.4%	69	7.1	6.7	8.8	8.8
Jacksonville, FL	2.4%	50	4.6%	60	11.9	12.2	11.1	11.6
Kansas City, MO-KS	5.9%	39	8.4%	46	10.5	11.1	14.5	15.7
Knoxville, TN	-5.0%	68	2.6%	64	7.1	6.8	3.1	3.2
Lancaster, PA	-11.7%	78	-4.2%	75	7.8	6.9	2.6	2.5
Las Vegas, NV	6.0%	38	7.2%	51	36.3	38.5	53.6	57.4
Little Rock, AR	5.6%	42	8.6%	45	6.5	6.9	2.3	2.5
Los Angeles-Long Beach-Santa Ana, CA	0.8%	56	1.1%	66	54.8	55.2	660	667
Louisville, KY-IN	-0.9%	60	5.4%	55	17.9	17.8	15.4	16.2
Madison, WI	9.7%	27	18.2%	25	36.0	39.5	11.8	13.9
McAllen, TX	189.8%	3	213.8%	3	0.0	0.1	0.0	0.1
Memphis, TN-MS-AR	-5.8%	72	-5.3%	76	12.7	12.0	12.1	11.5
Miami, FL	-7.2%	74	-3.9%	74	30.6	28.4	159	153
Milwaukee, WI	-18.5%	86	-15.4%	87	41.6	33.9	53.1	44.9
Minneapolis-St. Paul, MN	9.1%	30	13.2%	31	34.2	37.3	81.0	91.7
Mobile, AL	37.9%	8	35.9%	11	2.8	3.8	0.9	1.2
Modesto, CA	-12.7%	82	-12.3%	85	11.3	9.9	3.7	3.3
Nashville-Davidson, TN	15.2%	20	24.9%	17	10.1	11.6	7.5	9.3
New Haven, CT	6.8%	36	11.0%	37	25.9	27.7	13.6	15.1
New Orleans, LA	272.5%	1	220.3%	2	6.5	24.3	6.3	20.1
New York-Newark, NY-NJ-CT	14.0%	22	17.3%	27	192	219	3,406	3,996
Oklahoma City, OK	-2.5%	62	5.0%	57	3.5	3.4	2.7	2.8
Omaha, NE-IA	-12.7%	81	-8.3%	81	7.4	6.4	4.7	4.3
Orlando, FL	-12.9%	83	-5.6%	79	20.3	17.7	24.8	23.4
Oxnard, CA	2.2%	52	12.1%	33	11.9	12.2	4.0	4.5
Palm Bay-Melbourne, FL	51.8%	5	53.4%	6	2.9	4.5	1.3	1.9
Pensacola, FL-AL	-12.3%	79	-5.6%	78	3.9	3.4	1.2	1.2
Philadelphia, PA-NJ-DE-MD	-0.8%	59	3.8%	62	74.6	74.0	377	392
Phoenix-Mesa, AZ	16.1%	18	13.0%	32	19.1	22.2	60.4	68.3
Pittsburgh, PA	-4.6%	65	-3.6%	72	42.3	40.4	70.3	67.8
Portland, OR-WA	-7.2%	75	0.5%	67	65.8	61.1	111	111
Poughkeepsie-Newburgh, NY	-14.4%	84	-6.2%	80	22.7	19.5	7.8	7.3
Providence, RI-MA	3.9%	45	4.9%	58	18.9	19.6	22.0	23.0
Raleigh, NC	28.6%	12	43.6%	8	10.2	13.1	6.1	8.8

Transit Passenger Trips continued from page 46

Urbanized Area	Percent change in passenger trips/capita from 2005 to 2010	Rank of percent increase in trips/capita	Percent change in passenger trips from 2005 to 2010	Rank of percent increase in trips	Passenger trips /capita in 2005	Passenger trips /capita in 2010	Passenger trips in 2005 (millions)	Passenger trips in 2010 (millions)
Richmond, VA	2.3%	51	11.1%	36	15.8	16.2	13.1	14.5
Riverside-San Bernardino, CA	-6.4%	73	-2.9%	71	11.1	10.4	19.1	18.6
Rochester, NY	25.8%	13	31.6%	13	19.7	24.8	13.1	17.2
Sacramento, CA	8.5%	33	10.6%	39	22.3	24.2	32.7	36.2
Salt Lake City, UT	-5.8%	71	0.2%	68	31.6	29.8	28.5	28.6
San Antonio, TX	-0.9%	61	7.4%	50	28.8	28.6	39.6	42.5
San Diego, CA	0.0%	57	7.0%	52	34.1	34.1	90.1	96.4
San Francisco-Oakland, CA	-5.2%	69	1.7%	65	125	118	386	393
San Jose, CA	5.6%	41	11.6%	35	27.7	29.3	42.5	47.5
Sarasota-Bradenton, FL	23.8%	15	25.1%	16	6.0	7.4	3.5	4.4
Scranton, PA	-31.4%	93	-27.0%	93	12.8	8.8	4.6	3.4
Seattle, WA	9.6%	28	19.2%	22	55.6	60.9	153	183
Spokane, WA-ID	29.8%	11	38.1%	10	24.4	31.7	8.3	11.4
Springfield, MA-CT	2.2%	53	5.9%	54	18.2	18.6	10.2	10.8
St. Louis, MO-IL	-12.4%	80	-12.2%	84	23.5	20.6	48.7	42.8
Stockton, CA	1.6%	54	8.2%	48	12.5	12.7	4.2	4.6
Syracuse, NY	37.4%	9	43.5%	9	22.5	30.9	8.7	12.4
Tampa-St. Petersburg, FL	14.5%	21	19.0%	23	10.6	12.1	22.8	27.1
Toledo, OH-MI	-37.3%	98	-37.3%	98	11.8	7.4	5.7	3.6
Tucson, AZ	24.6%	14	25.6%	15	21.9	27.3	16.6	20.9
Tulsa, OK	3.7%	47	9.5%	41	4.5	4.7	2.5	2.7
Virginia Beach, VA	-27.0%	90	-23.1%	89	17.5	12.8	24.1	18.5
Washington, DC-VA-MD	-4.4%	64	3.3%	63	115	110	470	485
Wichita, KS	5.8%	40	10.3%	40	5.7	6.0	2.4	2.7
Worcester, MA-CT	13.4%	23	21.9%	19	9.1	10.3	3.8	4.7
Youngstown, OH-PA	-8.4%	77	-11.9%	83	4.1	3.8	1.6	1.4

Appendix D: Transportation to Work

Appendix D-1: Travel to Work by Car

Urbanized Area	Change in proportion of workers who commuted by car from 2000 to 2007-2011	Rank of decrease in proportion of workers who commuted by car	Number of workers commuted by car in 2007-2011	Percent of workers who commuted by car in 2007-2011
Akron, OH	-0.8%	76	240,221	92.5%
Albany, NY	-1.0%	70	248,449	87.0%
Albuquerque, NM	-1.1%	62	292,807	89.7%
Allentown-Bethlehem, PA-NJ	-0.8%	75	261,368	90.7%
Atlanta, GA	-2.9%	13	1,627,173	87.0%
Augusta-Richmond County, GA-SC	-0.3%	92	140,010	92.9%
Austin, TX	-4.5%	3	471,735	85.0%
Bakersfield, CA	-0.3%	91	164,870	92.0%
Baltimore, MD	-1.0%	67	889,363	84.5%
Baton Rouge, LA	-0.4%	90	231,798	93.0%
Birmingham, AL	-0.5%	81	279,489	94.3%
Boston, MA-NH-RI	-3.0%	11	1,566,934	75.7%
Bridgeport-Stamford, CT-NY	-2.9%	15	352,060	81.2%
Buffalo, NY	-1.5%	45	380,858	88.9%
Cape Coral, FL	-2.2%	26	138,628	90.5%
Charleston-North Charleston, SC	-0.9%	72	202,869	89.4%
Charlotte, NC-SC	-3.4%	9	409,831	88.7%
Chattanooga, TN-GA	-1.4%	50	156,878	93.1%
Chicago, IL-IN	-2.1%	30	3,013,874	78.2%
Cincinnati, OH-KY-IN	-0.2%	96	657,411	90.6%
Cleveland, OH	-0.4%	88	689,780	89.2%
Colorado Springs, CO	-3.4%	8	207,127	86.6%
Columbia, SC	-1.7%	42	200,257	88.7%
Columbus, OH	-1.2%	55	535,741	89.8%
Concord, CA	-2.9%	16	215,936	80.5%
Dallas-Fort Worth-Arlington, TX	-1.2%	59	1,978,552	91.3%
Dayton, OH	-1.5%	44	279,585	91.4%
Denver-Aurora, CO	-2.8%	17	901,151	84.9%
Des Moines, IA	-0.6%	78	190,278	91.9%
Detroit, MI	-1.1%	63	1,422,293	92.7%
El Paso, TX-NM	-2.0%	34	257,646	90.1%
Flint, MI	-0.5%	84	118,267	94.0%

Transportation to Work by Car continued from page 48

Urbanized Area	Change in proportion of workers who commuted by car from 2000 to 2007-2011	Rank of decrease in proportion of workers who commuted by car	Number of workers commuted by car in 2007-2011	Percent of workers who commuted by car in 2007-2011
Fresno, CA	-1.7%	41	211,984	89.8%
Grand Rapids, MI	-1.8%	39	234,530	90.9%
Harrisburg, PA	-0.8%	74	175,631	91.0%
Hartford, CT	-1.9%	37	380,003	89.2%
Honolulu, HI	-1.5%	49	305,459	79.0%
Houston, TX	-0.3%	94	1,861,202	90.5%
Indianapolis, IN	-0.5%	86	566,077	92.7%
Jacksonville, FL	-1.5%	48	406,803	91.3%
Kansas City, MO-KS	-1.3%	54	639,605	91.8%
Knoxville, TN	-0.5%	82	208,722	93.5%
Lancaster, PA	-0.1%	99	155,066	89.8%
Las Vegas, NV	-0.8%	73	606,856	88.7%
Little Rock, AR	-1.0%	68	162,132	93.6%
Los Angeles-Long Beach-Santa Ana, CA	-2.0%	35	4,612,482	84.4%
Louisville, KY-IN	-1.1%	64	386,171	91.5%
Madison, WI	-2.7%	19	151,785	78.7%
McAllen, TX	-3.0%	12	212,134	90.0%
Memphis, TN-MS-AR	-0.6%	79	395,914	93.1%
Miami, FL	-2.1%	31	2,136,976	88.4%
Milwaukee, WI	-0.3%	93	558,010	88.5%
Minneapolis-St. Paul, MN	-2.2%	28	1,089,237	85.3%
Mission Viejo, CA	-3.1%	10	232,910	87.8%
Mobile, AL	-0.5%	83	123,156	94.7%
Modesto, CA	-1.2%	57	115,710	91.6%
Nashville-Davidson, TN	-1.9%	36	355,026	90.5%
New Haven, CT	-2.6%	20	229,430	85.9%
New Orleans, LA	2.7%	100	323,189	88.3%
New York-Newark, NY-NJ-CT	-4.8%	1	4,740,099	56.4%
Ogden-Layton, UT	-1.6%	43	200,131	90.6%
Oklahoma City, OK	-0.2%	97	359,530	93.8%
Omaha, NE-IA	-1.0%	69	311,084	92.5%
Orlando, FL	-2.2%	29	570,768	90.1%

Urbanized Area	Change in proportion of workers who commuted by car from 2000 to 2007-2011	Rank of decrease in proportion of workers who commuted by car	Number of workers commuted by car in 2007-2011	Percent of workers who commuted by car in 2007-2011
Oxnard, CA	-1.1%	61	147,221	89.8%
Palm Bay-Melbourne, FL	-2.5%	21	171,573	91.4%
Pensacola, FL-AL	-2.2%	27	130,118	86.8%
Philadelphia, PA-NJ-DE-MD	-1.5%	47	1,975,948	80.8%
Phoenix-Mesa, AZ	-2.2%	25	1,208,150	87.7%
Pittsburgh, PA	-1.4%	51	667,104	83.7%
Portland, OR-WA	-3.6%	6	694,959	80.0%
Poughkeepsie-Newburgh, NY	-4.0%	4	141,808	82.8%
Providence, RI-MA	-1.3%	52	496,002	89.4%
Raleigh, NC	-2.9%	14	298,258	88.9%
Richmond, VA	-1.2%	58	388,787	90.7%
Riverside-San Bernardino, CA	-0.5%	85	630,691	91.0%
Rochester, NY	-1.2%	56	283,526	89.0%
Sacramento, CA	-2.4%	23	561,399	87.6%
Salt Lake City, UT	-1.3%	53	408,961	88.2%
San Antonio, TX	-0.6%	80	596,444	89.8%
San Diego, CA	-0.9%	71	1,119,972	86.0%
San Francisco-Oakland, CA	-3.9%	5	1,099,323	68.5%
San Jose, CA	-2.5%	22	661,411	87.8%
Sarasota-Bradenton, FL	-2.7%	18	204,209	89.1%
Scranton, PA	-0.8%	77	155,155	91.6%
Seattle, WA	-3.6%	7	1,196,263	80.0%
Spokane, WA-ID	-1.8%	40	142,400	87.3%
Springfield, MA-CT	-0.2%	98	233,291	90.8%
St. Louis, MO-IL	-2.0%	33	894,508	90.1%
Stockton, CA	-0.4%	89	115,749	91.6%
Syracuse, NY	-1.9%	38	162,107	87.8%
Tampa-St. Petersburg, FL	-2.3%	24	904,163	89.6%
Toledo, OH-MI	-1.0%	65	196,761	93.1%
Tucson, AZ	-2.0%	32	289,101	86.1%
Tulsa, OK	-0.4%	87	253,343	92.7%
Virginia Beach, VA	-1.5%	46	645,442	89.2%
Washington, DC-VA-MD	-4.7%	2	1,706,036	73.9%
Wichita, KS	-0.3%	95	196,190	94.4%
Worcester, MA-CT	-1.1%	60	191,962	90.0%
Youngstown, OH-PA	-1.0%	66	146,095	94.4%

Appendix D-2: Biking to Work and Working from Home

Urbanized Area	Percent change of workers who biked to work from 2000 to 2007-2011	Rank of increase in percent of workers who biked to work from 2000 to 2007-2011	Percent change of workers who worked from home from 2000 to 2007-2011	Rank of increase in percent of workers who worked from home from 2000 to 2007-2011
Akron, OH	0.1%	39	0.5%	81
Albany, NY	0.1%	46	0.7%	62
Albuquerque, NM	0.2%	30	0.6%	75
Allentown-Bethlehem, PA-NJ	0.0%	83	1.4%	24
Atlanta, GA	0.1%	55	2.0%	7
Augusta-Richmond County, GA-SC	0.0%	79	0.7%	64
Austin, TX	0.3%	16	2.6%	4
Bakersfield, CA	-0.1%	98	0.3%	98
Baltimore, MD	0.1%	40	0.5%	80
Baton Rouge, LA	-0.1%	97	0.3%	97
Birmingham, AL	0.1%	69	0.5%	82
Boston, MA-NH-RI	0.4%	7	1.0%	41
Bridgeport-Stamford, CT-NY	0.0%	77	0.5%	87
Buffalo, NY	0.2%	28	0.3%	96
Cape Coral, FL	-0.1%	93	1.7%	14
Charleston-North Charleston, SC	0.2%	23	1.7%	15
Charlotte, NC-SC	0.0%	87	2.0%	9
Chattanooga, TN-GA	0.1%	51	0.8%	58
Chicago, IL-IN	0.3%	13	1.3%	31
Cincinnati, OH-KY-IN	0.0%	74	0.9%	47
Cleveland, OH	0.1%	38	0.6%	74
Colorado Springs, CO	0.0%	75	1.3%	32
Columbia, SC	0.1%	35	2.7%	3
Columbus, OH	0.3%	15	1.4%	28
Concord, CA	0.2%	26	1.6%	18
Dallas-Fort Worth-Arlington, TX	0.0%	80	1.1%	36
Dayton, OH	0.1%	37	0.8%	56
Denver-Aurora, CO	0.5%	4	1.2%	34
Des Moines, IA	0.1%	64	0.4%	93
Detroit, MI	0.1%	59	0.9%	52
El Paso, TX-NM	0.0%	76	0.6%	76
Flint, MI	0.1%	61	0.8%	57

Urbanized Area	Percent change of workers who biked to work from 2000 to 2007-2011	Rank of increase in percent of workers who biked to work from 2000 to 2007-2011	Percent change of workers who worked from home from 2000 to 2007-2011	Rank of increase in percent of workers who worked from home from 2000 to 2007-2011
Fresno, CA	-0.1%	92	0.7%	67
Grand Rapids, MI	0.3%	12	1.1%	35
Harrisburg, PA	0.1%	57	0.3%	99
Hartford, CT	0.1%	43	0.8%	60
Honolulu, HI	0.0%	86	0.7%	68
Houston, TX	0.0%	88	0.7%	63
Indianapolis, IN	0.1%	45	0.5%	83
Jacksonville, FL	0.1%	47	1.8%	12
Kansas City, MO-KS	0.1%	58	0.6%	72
Knoxville, TN	0.1%	56	0.9%	48
Lancaster, PA	0.1%	63	0.5%	85
Las Vegas, NV	0.1%	71	0.6%	78
Little Rock, AR	-0.1%	95	0.8%	59
Los Angeles-Long Beach-Santa Ana, CA	0.2%	32	1.1%	39
Louisville, KY-IN	0.1%	42	0.4%	92
Madison, WI	1.4%	2	0.5%	86
McAllen, TX	0.1%	72	1.8%	13
Memphis, TN-MS-AR	0.1%	68	0.4%	88
Miami, FL	0.1%	70	1.2%	33
Milwaukee, WI	0.3%	19	0.6%	71
Minneapolis-St. Paul, MN	0.5%	5	1.0%	42
Mission Viejo, CA	0.3%	18	2.8%	2
Mobile, AL	0.0%	91	0.9%	49
Modesto, CA	-0.1%	94	0.9%	53
Nashville-Davidson, TN	0.1%	34	1.4%	22
New Haven, CT	0.3%	10	1.0%	43
New Orleans, LA	0.3%	21	0.4%	89
New York-Newark, NY-NJ-CT	0.1%	33	0.9%	54
Ogden-Layton, UT	0.0%	85	0.6%	79
Oklahoma City, OK	0.1%	60	0.4%	91
Omaha, NE-IA	0.0%	73	0.7%	66
Orlando, FL	0.0%	84	1.4%	23
Oxnard, CA	-0.2%	100	1.1%	37
Palm Bay-Melbourne, FL	0.0%	78	1.6%	17
Pensacola, FL-AL	0.0%	90	4.6%	1
Philadelphia, PA-NJ-DE-MD	0.3%	20	0.7%	61

Urbanized Area	Percent change of workers who biked to work from 2000 to 2007-2011	Rank of increase in percent of workers who biked to work from 2000 to 2007-2011	Percent change of workers who worked from home from 2000 to 2007-2011	Rank of increase in percent of workers who worked from home from 2000 to 2007-2011
Phoenix-Mesa, AZ	0.0%	89	1.6%	20
Pittsburgh, PA	0.2%	31	1.1%	38
Portland, OR-WA	1.7%	1	1.6%	19
Poughkeepsie-Newburgh, NY	0.1%	67	2.4%	6
Providence, RI-MA	0.1%	54	0.9%	44
Raleigh, NC	0.1%	41	2.4%	5
Richmond, VA	0.2%	25	1.4%	27
Riverside-San Bernardino, CA	-0.1%	96	0.7%	70
Rochester, NY	0.4%	8	0.7%	69
Sacramento, CA	0.4%	6	1.5%	21
Salt Lake City, UT	0.3%	17	0.3%	95
San Antonio, TX	0.0%	82	0.9%	55
San Diego, CA	0.1%	44	1.6%	16
San Francisco-Oakland, CA	0.6%	3	2.0%	8
San Jose, CA	0.3%	11	1.4%	26
Sarasota-Bradenton, FL	0.3%	22	1.4%	25
Scranton, PA	0.1%	62	0.3%	94
Seattle, WA	0.3%	9	0.9%	45
Spokane, WA-ID	0.2%	24	0.9%	51
Springfield, MA-CT	0.2%	29	1.0%	40
St. Louis, MO-IL	0.1%	36	0.9%	46
Stockton, CA	-0.2%	99	1.3%	29
Syracuse, NY	0.2%	27	0.5%	84
Tampa-St. Petersburg, FL	0.1%	53	1.8%	11
Toledo, OH-MI	0.1%	49	0.6%	73
Tucson, AZ	0.1%	52	0.9%	50
Tulsa, OK	0.1%	65	0.4%	90
Virginia Beach, VA	0.1%	50	1.9%	10
Washington, DC-VA-MD	0.3%	14	0.7%	65
Wichita, KS	0.1%	66	0.3%	100
Worcester, MA-CT	0.1%	48	1.3%	30
Youngstown, OH-PA	0.0%	81	0.6%	77

Appendix E: Households with Access to Automobiles

Urbanized Area	Change in percent of households with no vehicle from 2006 to 2011	Change in percent of households with 2+ vehicles from 2006 to 2011
Akron, OH	2.2%	-3.6%
Albany, NY	0.8%	0.3%
Albuquerque, NM	1.2%	-3.4%
Allentown-Bethlehem, PA-NJ	2.0%	-2.6%
Atlanta, GA	0.1%	-3.4%
Augusta-Richmond County, GA-SC	-0.2%	1.3%
Austin, TX	0.2%	-0.7%
Bakersfield, CA	3.0%	-2.1%
Baltimore, MD	-0.3%	-0.9%
Baton Rouge, LA	0.2%	0.1%
Birmingham, AL	0.3%	-0.5%
Boston, MA-NH-RI	1.2%	-1.8%
Bridgeport-Stamford, CT-NY	0.8%	-2.7%
Buffalo, NY	1.0%	-1.0%
Cape Coral, FL	0.9%	-8.9%
Charleston-North Charleston, SC	0.3%	-2.1%
Charlotte, NC-SC	1.6%	-3.5%
Chattanooga, TN-GA	1.7%	-3.5%
Chicago, IL-IN	1.1%	-2.2%
Cincinnati, OH-KY-IN	-0.3%	-1.1%
Cleveland, OH	0.9%	-2.6%
Colorado Springs, CO	0.7%	-2.9%
Columbia, SC	1.9%	-0.7%
Columbus, OH	0.9%	-1.4%
Concord, CA	0.5%	-0.8%
Dallas-Fort Worth-Arlington, TX	0.5%	0.3%
Dayton, OH	1.0%	-2.8%
Denver-Aurora, CO	0.3%	-0.6%
Des Moines, IA	0.7%	-2.7%
Detroit, MI	1.2%	-4.1%

Households with Access to Automobiles continued from page 54

Urbanized Area	Change in percent of households with no vehicle from 2006 to 2011	Change in percent of households with 2+ vehicles from 2006 to 2011
El Paso, TX-NM	-1.3%	1.3%
Flint, MI	1.8%	-3.8%
Fresno, CA	0.5%	-6.4%
Grand Rapids, MI	2.9%	-2.8%
Harrisburg, PA	-0.9%	-1.2%
Hartford, CT	1.7%	-4.2%
Honolulu, HI	0.1%	-0.5%
Houston, TX	0.0%	0.0%
Indianapolis, IN	1.6%	-1.5%
Jacksonville, FL	0.3%	-1.2%
Kansas City, MO-KS	0.6%	-1.7%
Knoxville, TN	0.1%	-4.8%
Lancaster, PA	2.2%	-1.8%
Las Vegas, NV	2.4%	-4.7%
Little Rock, AR	1.7%	-3.0%
Los Angeles-Long Beach-Santa Ana, CA	0.8%	-1.4%
Louisville, KY-IN	-0.1%	-1.2%
Madison, WI	2.0%	-2.8%
McAllen, TX	-1.5%	1.4%
Memphis, TN-MS-AR	-0.3%	-0.1%
Miami, FL	0.3%	-2.7%
Milwaukee, WI	1.0%	-1.3%
Minneapolis-St. Paul, MN	1.1%	-2.8%
Mission Viejo, CA	-0.1%	-1.5%
Mobile, AL	1.8%	-5.9%
Modesto, CA	1.5%	-5.3%
Nashville-Davidson, TN	1.0%	0.6%
New Haven, CT	1.9%	-3.9%
New Orleans, LA	3.1%	-7.9%
New York-Newark, NY-NJ-CT	1.2%	-1.4%

Households with Access to Automobiles continued from page 55

Urbanized Area	Change in percent of households with no vehicle from 2006 to 2011	Change in percent of households with 2+ vehicles from 2006 to 2011
Ogden-Layton, UT	0.1%	-1.5%
Oklahoma City, OK	0.6%	0.5%
Omaha, NE-IA	1.3%	-2.1%
Orlando, FL	0.6%	-2.9%
Oxnard, CA	1.3%	-3.1%
Palm Bay-Melbourne, FL	0.0%	-5.9%
Pensacola, FL-AL	-0.2%	-3.0%
Philadelphia, PA-NJ-DE-MD	0.5%	-1.3%
Phoenix-Mesa, AZ	1.9%	-2.9%
Pittsburgh, PA	1.0%	-0.5%
Portland, OR-WA	0.8%	-1.2%
Poughkeepsie-Newburgh, NY	3.2%	-5.3%
Providence, RI-MA	1.0%	-2.1%
Raleigh, NC	0.5%	-1.3%
Richmond, VA	-0.2%	-1.3%
Riverside-San Bernardino, CA	1.1%	-0.3%
Rochester, NY	1.4%	-3.2%
Sacramento, CA	0.8%	-5.2%
Salt Lake City, UT	0.8%	-2.0%
San Antonio, TX	0.1%	-0.4%
San Diego, CA	0.4%	-1.6%
San Francisco-Oakland, CA	1.0%	-0.8%
San Jose, CA	-0.4%	0.8%
Sarasota-Bradenton, FL	0.8%	-2.6%
Scranton, PA	0.6%	-3.2%
Seattle, WA	0.9%	-0.9%
Spokane, WA-ID	0.6%	2.0%
Springfield, MA-CT	1.6%	0.1%
St. Louis, MO-IL	0.8%	-1.1%
Stockton, CA	0.6%	-2.7%
Syracuse, NY	2.1%	-1.3%
Tampa-St. Petersburg, FL	1.6%	-2.7%
Toledo, OH-MI	-0.4%	-4.2%

Notes

1. Arthur Ross, Pedestrian-Bicycle Coordinator, Traffic Engineering Division, City of Madison, personal communication, 8 November 2013 and 14 November 2013.

2. Ibid.

3. Streets that are one-way for cars but two-way for bicycles and turn lanes exclusively for bikes and buses: Arthur Ross, Pedestrian-Bicycle Coordinator, Traffic Engineering Division, City of Madison, personal communication, 8 November 2013; Diagonal bike crossings bike lanes that change locations during rush hour and bike boxes: Steve Elbow, "Bike City; Madison's Efforts to Become a Top Bicycling Community Show No Signs of Slowing," *The Capital Times*, 31 July 2013; New bus lines: City of Madison, Metro Transit, *Upcoming August Service Changes*, downloaded from www.cityofmadison.com/metro/augustservicechanges/31.cfm, 8 November 2013.

4. See note 1.

5. Ibid; City of Madison, *N. Sherman Ave: Operations and Safety Analysis from Fordem Avenue to Trailsway*, 15 January 2013; Jack Cullen, "Sherman Avenue Redo Draws Praise, Ire; North Side," *Wisconsin State Journal*, 19 August 2013.

6. Dean Mosiman, "Madison Extends Bus Service to Owl Creek, Grandview Commons Neighborhoods," *Wisconsin State Journal*, 23 August 2013.

7. 88 percent: Steve Elbow, "Bike City; Madison's Efforts to Become a Top Bicycling Community Show No Signs of Slowing," *The Capital Times*, 31 July 2013.

8. 11.0 million boardings in 2004: Metro Transit, *2011 Record Ridership*, downloaded from www.cityofmadison.com/metro/2011ridership/ridership.cfm, 14 October 2013; 14.6 million boardings in 2012: Metro Transit, *Metro Transit 2012 Annual Report*, no date.

9. Table *VM-2: Function System Travel* from the Department of Transportation's Federal Highway Administration's *2011 Highway Statistics* series of reports, available at www.fhwa.dot.gov/policyinformation/statistics.cfm. This report uses "urban areas" in some instances to maintain accurate data. Urbanized areas have 50,000 people or more while urban clusters have 2,500 to 49,999 people, according to Federal Highway Administration, Census Issues: Census Urbanized Areas and MPO/TMA Designation, downloaded from www.fhwa.dot.gov/planning/census_issues/urbanized_areas_and_mpo_tma/faq/page01.cfm, 22 October 2013.

10. These 100 urbanized areas housed 53 percent of the U.S. population in 2000.

11. Federal Highway Administration, *Census Issues: Census Urbanized Areas and MPO/TMA Designation*, downloaded from www.fhwa.dot.gov/planning/census_issues/urbanized_areas_and_mpo_tma/faq/page01.cfm, 22 October 2013.

12. Vehicle-miles traveled: Federal Highway Administration, *Historical Monthly VMT Report*, 3 May 2011; Population data for 1900-1999: U.S. Census Bureau, *Historical Population Estimates: July 1, 1900 to July 1, 1999*, 28 June 2000. For population data for 2000-2010 see U.S. Census Bureau, *GCT-T1: Population Estimates*, downloaded from factfinder2.census.gov, 17 November 2011.

13. Total miles driven in America: U.S. Department of Transportation, Federal Highway Administration, *December 2012 Traffic Volume Trends*, downloaded from www.fhwa.dot.gov/policyinformation/travel_monitoring/12dectvt/page2.cfm, 25 October 2013. Population from 2004 to 2010: U.S. Census, *Table 1. Intercensal Estimates of the Resident Population by Sex and Age for the United States: April 1, 2000 to July 1, 2010*, downloaded from www.census.gov/popest/data/intercensal/national/nat2010.html, 25 October 2013. Population from 2011 and 2012: U.S. Department of Transportation, Federal Highway Administration, *Table 3. Estimates of Resident Population Change for the United States, Regions, States, and Puerto Rico and Region and State Rankings: July 1, 2011 to July 1, 2012*, downloaded from www.census.gov/popest/data/national/totals/2012/index.html, 25 October 2013. Population statistics reflect the entire population as opposed to the population of licensed drivers.

14. U.S. Department of Transportation, Federal Highway Administration, *December 2012 Traffic Volume Trends*, downloaded from www.fhwa.dot.gov/policyinformation/travel_monitoring/12dectvt/page2.cfm, 25 October 2013.

15. Bureau of Labor Statistics, *BLS Spotlight on Statistics: The Recession of 2007-2009*, February 2012.

16. Clark Williams-Derry citing research by Joe Cortright, *Driving Declined During the Recovery* (blog), 19 February 2013.

17. U.S. Department of Transportation, Federal Highway Administration, *National Household Travel Survey.*

18. U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics* series of reports, downloaded from www.fhwa.dot.gov/policyinformation/statistics.cfm.

19. Licensed drivers: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics* series of reports, downloaded from www.fhwa.dot.gov/policyinformation/statistics.cfm; Driving-age population based on population 16 years and older: U.S. Census Bureau, *Historical Population Estimates*, downloaded from www.census.gov/popest/data/historical/index.html, 5 December 2012.

20. Tony Dutzik, Frontier Group, and Phineas Baxandall, U.S. PIRG Education Fund, *A New Direction: Our Changing Relationship with Driving and the Implications for America's Future*, Spring 2013.

21. U.S. Bureau of Labor Statistics, *Labor Force Statistics from the Current Population Survey*, downloaded from www.bls.gov/data, 7 January 2013.

22. "With people in their prime earning and child-rearing years tending to drive the most": U.S. Department of Transportation, Federal Highway Administration, *Summary of Travel Trends: 2009 National Household Travel Survey*, June 2011; "A greater share of Americans are entering age groups that have historically driven fewer miles": (1) U.S. Census Bureau, *Historical Population Estimates*, downloaded from www.census.gov/popest/data/historical/index.html, 5 December 2012, and (2) U.S. Census Bureau, *2012 National Population Projections*, downloaded from www.census.gov/population/projections/data/national/2012.html, 5 December 2012.

23. Price of gasoline: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review: Table 9.4 Retail Motor Gasoline and On-Highway Diesel Fuel Prices*, September 2013. Inflation calculator: Bureau of Labor Statistics, *CPI Inflation Calculator*, downloaded from www.bls.gov/data/inflation_calculator.htm, 22 October 2013.

24. Zipcar, *Millennials & Technology*, February 2013. For further discussion see Tony Dutzik and Travis Madsen, Frontier Group, and Phineas Baxandall, U.S. PIRG Education Fund, *A New Way to Go: The Transportation Apps and Vehicle-Sharing Tools That Are Giving More Americans the Freedom to Drive Less*, Fall 2013.

25. VMT in urbanized areas: Table *HM-71* (sometimes called "Miles and Daily Vehicle-Miles of Travel") from the Department of Transportation's Federal Highway Administration's *Highway Statistics* series of reports, available at www.fhwa.dot.gov/policyinformation/statistics.cfm; Total VMT: Table *VM-2* (sometimes called "Annual Vehicle-Miles") from the Department of Transportation's Federal Highway Administration's *Highway Statistics* series of reports, available at www.fhwa.dot.gov/policyinformation/statistics.cfm.

26. 8,600 to 8,450 miles applies to all urban areas, which includes urbanized areas and urban clusters.

27. VMT in 1980: Table *VM-1: Vehicle Miles of Travel* in U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 1980*; VMT in 2000: *Table VM-1: Annual Vehicle Distance Traveled in Miles and Related Data*, in the U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2000*; Urban population in 1980: U.S. Census Bureau, *Table 4. Population: 1970-1990*, downloaded from www.census.gov/geo/reference/urban-rural.html, 18 November 2013; Urban population in 2000: *Table DP-1: Profile of General Demographic Characteristics: 2000* from the U.S. Census (2000 Summary File 1).

28. The average decline in VMT per capita was calculated by dividing the total VMT by the total population for the 74 urbanized areas.

29. 2000 population: Table *P001: Total Population* from the U.S. Census (2000 Summary File 1); 2005-2009 and 2007-2011 populations: Table *B01003: Total Population* from the U.S. Census (American Community Survey 5-Year Estimates). 5-year estimates were used because 1-year and 3-year estimates for the population of these cities are not available; Valencia West is an exurb of Tucson outside the urbanized area: U.S. Census Bureau, *Geography: Census 2000 Urbanized Area Outline Maps*, downloaded from www.census.gov/geo/maps-data/maps/ua2kmaps.html, 13 November 2013.

30. Ibid.

31. Examined more closely, the large decrease in the VMT per capita in the New Orleans urbanized area is the result of a large increase in population from 2006 to 2011, while the annual total VMT remained relatively stable. The large increase in population could be due to residents returning to New Orleans after Hurricane Katrina. Possible explanations for why the population increased while total VMT remained relatively stable include: (a) people reduced their driving, (b) in 2006, much of the vehicle-miles had been driven by aid workers, or (c) state officials did not fully account for the impact of Hurricane Katrina on driving while calculating VMT in 2006.

32. For all maps in this report, the increase in the area of the circles is linear. Therefore, the area of the 10-percent sized circle is twice as big as the area of the 5-percent sized circle.

33. Since some data from the ACS one-year estimates can have relatively large margins of error, the Census only applies the one-year estimates to populations of 65,000 and larger. While three- or five-year estimates would have smaller margins of error, this report uses the one-year estimates in some cases because the most recent data that reflect changing transportation habits are from 2011, and a three- or five-year es-

timate would capture transportation habits from earlier years. In addition, the least populous urbanized areas in this report have populations that are almost five times larger than the threshold (65,000) used to report one-year estimates.

34. The large decrease in the VMT per capita in the New Orleans urbanized area is the result of a large increase in population from 2006 to 2011 while the annual total VMT remained relatively stable. The large increase in population could be due to residents returning to New Orleans after Hurricane Katrina. Despite the population increase, total VMT remained relatively stable because (a) people reduced their driving, (b) in 2006, much of the vehicle-miles were driven by aid workers, or (c) state officials did not fully account for the impact of Hurricane Katrina on driving while calculating VMT in 2006.

35. In order to calculate the VMT per capita for the 26 excluded urbanized areas, researchers would need to collect data outside the scope of this report. These data included, but are not limited to, the population in 2006 and 2011 within urbanized area boundaries set by the 1990 Census (which could be available in raw Census data), and the population within boundaries of urbanized areas set by state DOTs (state DOTs could track the population numbers).

36. The VMT in 2011 reported by the FHWA did not use the urbanized area boundaries demarcated by the 2010 Census: Justin Clarke, HPMS/DATA Analysis, Highway System Performance Division, Office of Highway Policy, Federal Highway Administration, U.S. Department of Transportation, personal communication, 25 October 2013.

37. U.S. Department of Transportation, Federal Highway Administration, *National Household Travel Survey*. From 2001 to 2009, VMT per capita declined for the following purposes: "Earn a Living," "Family/Personal Businesses," and "Social & Recreational."

38. Throughout this report, "2007-2011" refers to data collected by the 2011 American Community Survey 5-year survey which covers years 2007, 2008, 2009, 2010 and 2011. Thus, data points during 2007-2011 are not reflective of a single year, but the entire five year period.

39. American Association of State Highway and Transportation Officials, *Commuting in America 2013: The National Report on Commuting Patterns and Trends: Brief 2. The Role of Commuting in Overall Travel*, May 2013.

40. "Means of Transportation to Work for the U.S.: 1960-1990" Table available at www.census.gov/hhes/commuting/data/commuting.html.

41. Data on registered vehicles (Bureau of Transportation Statistics, *Table 1-11: Number of U.S. Aircraft, Vehicles, Vessels, and Other Conveyances*, downloaded from www.rita.dot.gov, 15 October 2013) and data on population (1900-1999: U.S. Census Bureau, *Historical Population Estimates: July 1, 1900 to July 1, 1999*, 28 June 2000; 2000-2010: U.S. Census Bureau, *GCT-T1: Population Estimates*, downloaded from factfinder2.census.gov, 17 November 2011) show that from 1960 to 2007 the number of registered vehicles per capita increased. It is possible that registered vehicles per capita increased before 1960, but the data are not available.

42. This report's classification of "households without a car" refers to the Census' classification of "occupied housing units" "with no vehicle available."

43. Urban areas include urbanized areas and urban clusters.

44. See note 33.

45. American Public Transportation Association, *Impacts of the Recession on American Public Transportation Agencies, 2011 Updated*, August 2011.

46. While researchers attempted to calculate public transit data for the 100 most populous urbanized areas, two urbanized areas – Mission Viejo (CA) and Ogden (UT) – were excluded because the National Transit Database did not provide information on these urbanized areas.

47. See note 33.

48. The passenger-miles traveled per capita in the McAllen (TX) urbanized area increased from 0.17 to 0.79. Thus while the McAllen urbanized area saw a very large percent increase *in PMT* per capita, it saw a relatively small increase in absolute terms.

49. The percent increase in PMT per capita in the New Orleans (LA) urbanized area could be a result of Hurricane Katrina.

50. Rio Metro Regional Transit District, *Project History: Commuter Rail Project Development History*, downloaded from www.nmrailrunner.com/component/content/article/19-ct-categories-en/ct-about-en/71-project-history, 16 October 2013. An increase in passenger miles on commuter rail is tracked by Table 19 of the National Transit Database.

51. SoundTransit, *Opening Weekend Attracts More than 92,000 Light Rail Riders* (press release), 19 July 2009; Mike Lindblom, "Early Holiday Arrival: Light Rail to Airport," *The Seattle Times*, 19 December 2009. An increase in passenger miles on light rail is tracked by Table 19 of the National Transit Database.

52. U.S. Department of Transportation, Federal Highway Administration, *National Household Travel Survey*.

53. U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, *Special Report; Public Perceptions on Transportation Characteristics of Livable Communities: The 2009 Omnibus Household Survey*, July 2011.

54. The proportion of workers who use bikes for a segment of their journey (as opposed to the majority) could be higher than the numbers purported here because the Census only classifies workers who bike the majority of their trip to work (measured in miles) as bike commuters. Therefore workers who bike to a subway station and then take the subway for the rest of their trip are classified as public transit commuters – not bike commuters – if the distance traveled on the subway is longer than the distance traveled on the bike.

55. Bicycling's share of total commuting in these areas is much higher when evaluating only the central city as opposed to the broader urbanized area, which includes both cities and their suburbs.

56. For further discussion, see Phineas Baxandall, U.S. PIRG Education Fund, *Moving Off the Road: A State-by-State Analysis of the National Decline in Driving*, August 2013.

57. Sierra Club's 2012 list of best and worst transportation projects that were conceived of between the 1940s and 1960s and at least one of which dates to the turn of the 20th century. Source: Sierra Club, *Smart Choices, Less Traffic: 50 Best and Worst Transportation Projects in the United States*, November 2012.

58. One example of a city that cut back transit service is Cleveland: Greater Cleveland Regional Transit Authority, *Budget Challenges*, downloaded from www.riderta.com/budgetchallenges, 6 November 2013.

59. Federal Highway Administration, *Census Issues: Census Urbanized Areas and MPO/TMA Designation*, downloaded from www.fhwa.dot.gov/planning/census_issues/urbanized_areas_and_mpo_tma/faq/page01.cfm, 22 October 2013.

60. United States Census Bureau, *American Community Survey: How the American Community Survey Works for Your Community*, downloaded from www.census.gov/acs/www/about_the_survey/how_the_acs_works, 5 November 2013.

61. United States Census Bureau, *What Is the Census*, downloaded from www.census.gov/2010census/about, 5 November 2013.

62. United States Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, *Highway Statistics Series*, downloaded from www.fhwa.dot.gov/policyinformation/statistics.cfm, 5 November 2013; United States Department of Transportation, Federal Highway Administration, Office of Highway Policy Information, *Traffic Monitoring Guide*, September 2013.

63. United States Department of Transportation, Federal Highway Administration, *2009 National Household Travel Survey; User's Guide (Version 2)*, October 2011.

64. John Giorgis, Director of the Office of Strategic Planning & Analysis at the Federal Transit Administration, personal communication, 11 November 2013.

65. Justin Clarke, HPMS/DATA Analysis, Highway System Performance Division, Office of Highway Policy, Federal Highway Administration, U.S. Department of Transportation, personal communication, 25 October 2013.

66. United States Census Bureau, *American Community Survey; When to Use 1-year, 3-year, or 5-year Estimates*, downloaded from www.census.gov/acs/www/guidance_for_data_users/estimates, 6 November 2013.